FOCUS ON RESEARCH

A GUIDE TO DEVELOPING STUDENTS' RESEARCH SKILLS

Alberta Education
Curriculum Support Branch

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TABLE OF CONTENTS

PREFACE

Foreword vii
About This Monograph viii
Using The Chapters in This Monograph viii

CHAPTER 1

Introduction and Overview 1
Introduction 2
The Model 3
Overview 4

CHAPTER 2

Focus 7

CHAPTER 3

Research - The Components 11
Stage 1: Planning 13
Stage 2: Information Retrieval 14
Stage 3: Information Processing 16
Stage 4: Information Sharing 18
Stage 5: Evaluation 19

CHAPTER 4

Curriculum Links 21
Elementary Programs of Study 22
Junior High Programs of Study 23
Senior High Programs of Study 24
Alberta Education Programs of Study 25

CHAPTER 5

Before Research - Teacher Preparation 27
How Do I Work With Someone Else To Initiate Research? 29
What If I'm All Alone? 30
I'm Hooked, How Do I Start? 31
What Do You Have To Help Me With My Research Activity? . 32
What Else Do You Have For Me? 34
Sample Research Activity Unit Plan 35
What About More Directed Help For My Students? 38
Sample Student Research Plan 39

CHAPTER 6

Putting It Into Practice 41
Stage 1: Planning 43
Brainstorming 43
Stage 2: Information Retrieval 44

Chapter 6 (continued)

Stage 3: Information Processing 47
Reading Tables, Graphs and Diagrams 47
Webbing 48
Develop Research Procedures 50
Stage 4: Information Sharing 51
Record Sheet 51
Display Boards 52
Debating 53
Oral Presentations/Speeches 54
Stage 5: Evaluation 55
Evaluation Techniques 55
Group Effectiveness Appraisal Form 57
Sample Student Self-evaluation 58
Peer Evaluation: Oral Presentations Speeches . 59

CHAPTER 7

From the Classroom 61
Sample 1 – Division 1 63
Sample 2 – Division 2 65
Sample 3 – Division 2 67
Sample 4 – Division 3 69
Sample 5 – Division 4 71
Sample 6 – Division 4 73

APPENDIX

Copy-ready Forms 75
Overview of Research Skills Continuum 77
Teacher Guide for Planning Research – A Checklist . . 78
Research Activity Unit Plan 79
Student Research Plan 81
Group Effectiveness Appraisal 82
Student Self-evaluation 83
Peer Evaluation: Oral Presentations/Speeches 84

REFERENCES . . 85

PREFACE

Foreword

focus on Learning, published by Alberta Education in September 1985, outlines an integrated program model (see Figure 1) for school libraries. The integrated model focuses on involving students in the planned and purposeful use of library resources. It is designed to help students *grow* in their ability to gather, process and share information.

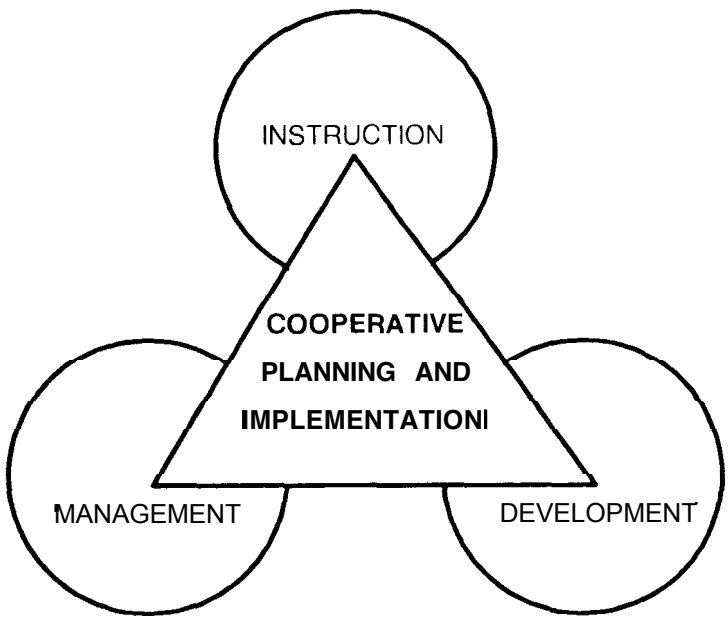


Figure 1: An Integrated Program Model for School Libraries

To process information proficiently, students need finely tuned critical thinking skills. *Teaching Thinking,* an Alberta Education draft discussion paper, 1989, presents an in-depth rationale for, and supports direct instruction in these thinking skills.

The ability to deal effectively with the proliferation of information is more essential now than at any other time in history. **For information to become personal knowledge, students have to make connections and see relationships between what they read, see or hear and what they know.** They need to learn a **comprehensive research process** that can be applied in any subject area and in real-life situations.

About This Monograph

Here's what you'll find in this document:

- Chapter 1, "Introduction and Overview," provides information on the goals of research and on the purposeful use of research activities.
- Chapter 2, "Focus," explains the role of the student, the teacher and teacher-librarian, and resources in the development of a research activity.
- Chapter 3, "Research – The Components," lists, in table format, the five stages of this research model and the skills and strategies which are involved in each stage.
- Chapter 4, "Curriculum Links," cites skills from teacher resource manuals which promote the use of research.
- Chapter 5, "Before Research – Teacher Preparation," provides planning information which will be most useful to teachers just beginning to integrate research into classroom activities.
- Chapter 6, "Putting It Into Practice," provides specific examples for implementing research in your classes. Examples are provided for each stage.
- Chapter 7, "From the Classroom," consists of descriptions of research activities from teachers who implement research in their curriculum.
- The Appendix provides planning forms which may prove useful to teachers who are new to integrating research activities into their classes.

Using the Chapters in This Monograph

Teachers* who are new to integrating research in their classes may wish to read this document in sequence.

For those well acquainted with integrating research, Chapter 3 provides a useful synopsis of the components of research. Chapters 5, 6 and 7 also offer ideas for experienced teachers of research activities.

CHAPTER 1

Introduction and Overview

Is this chapter useful to me?

This chapter presents a research model and suggestions all teachers should consider before beginning a research activity.

What will I find in this chapter?

- Introduction
- The Research Model
- Overview

Introduction

The **Goals of Schooling** established by Alberta Education specify that students will be provided with the opportunities and means to:

- develop competencies in reading, writing, speaking, listening and viewing;
- develop the learning skills of finding, organizing, analysing and applying information in a constructive and objective manner; and
- acquire knowledge and develop skills, attitudes and habits required to respond to the opportunities and expectations of the workworld.

The following pages outline a resource-based research model (see Figure 2) which helps students to manage information efficiently and effectively, and, in this process, to gain skills which are transferable to all school and work situations. The model provides a developmental approach to teaching students how to do research — one facet of the instructional component of *focus on Learning.* Using this approach, students gain skills which are **transferable** to many other types of curriculum-based research (e.g., historical, empirical, action, etc.) and to many situations in their everyday lives.

THE MODEL

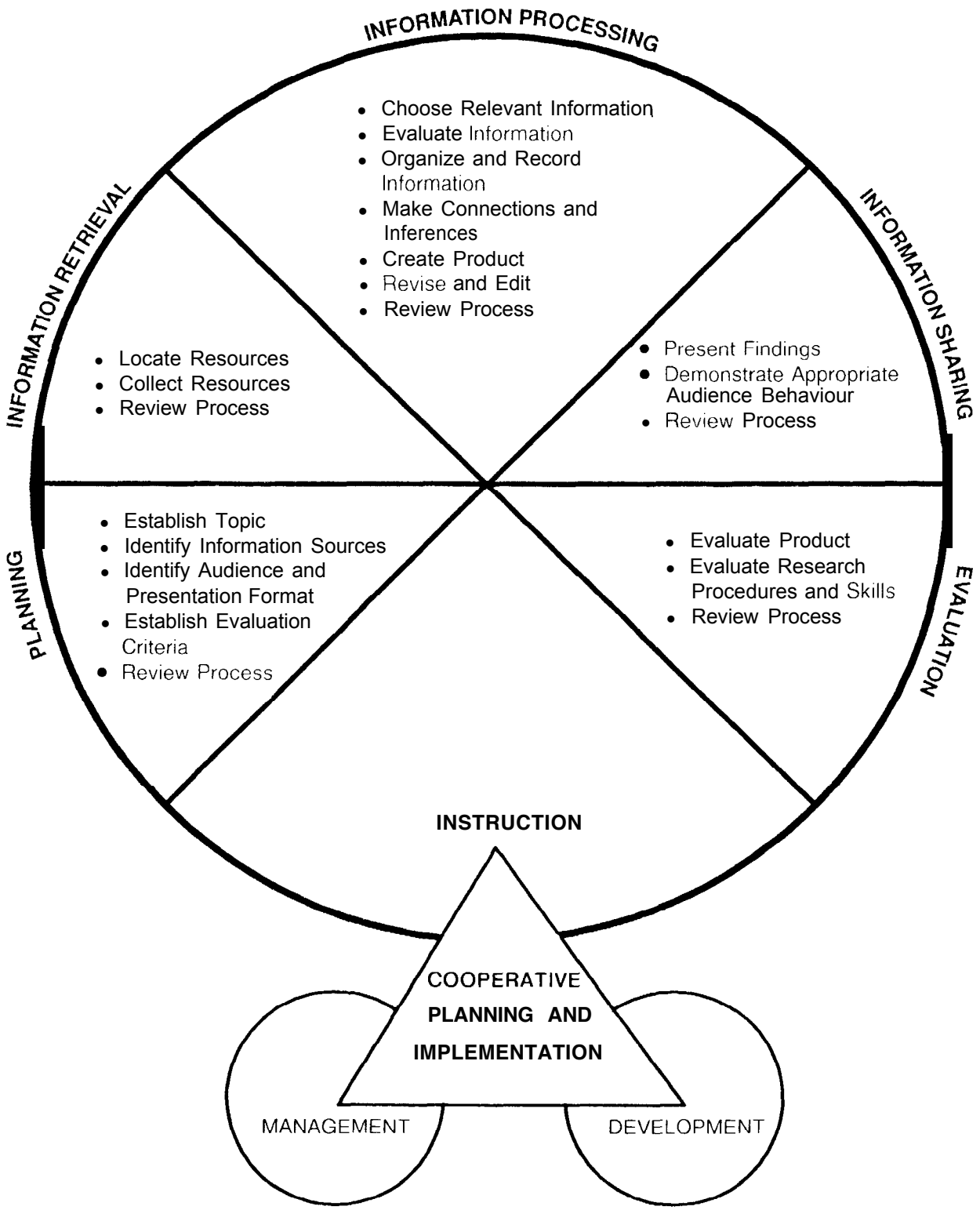


Figure 2: A Developmental Approach to Research

Overview

***"The beginning of research is curiosity, its essence is* discernment and its goal truth *and* justice."**

Isaac H. Satanow

Research as a Continuum

This document presents a research model that contains both a continuum of research procedures and skills and a continuum of levels of research, Introductory to advanced. See Figure 3.

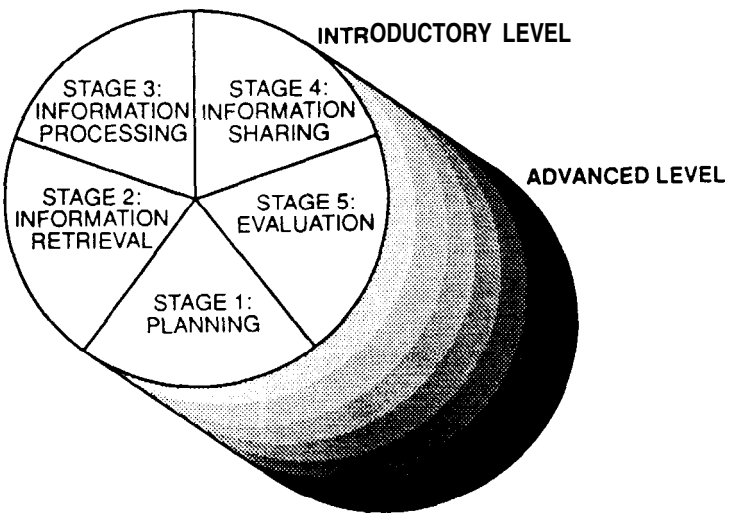


Figure 3: The Continuum of Research Stages and The Continuum of Research Levels.

The continuum of research procedures and skills presents the stages through which students will progress in order to produce a desirable research product. The student begins by preparing for research (Planning Stage) and progresses to information gathering (Information Retrieval Stage), to synthesizing information (Information Processing Stage), to presenting the final product (Information Sharing Stage). In the final stage the student and teacher identify strengths and make suggestions for future research (Evaluation Stage). The continuum is cumulative, and the student acquires expanded skills and procedures while working through the stages. **However, a teacher may decide to focus on only one aspect of the research stages or skills for a certain assignment.** This approach to using research activities will be explained in greater detail below.

The continuum of levels of research, introductory to advanced, indicates that students will progress. as they experience more research activities, from teacher directed learning to student directed learning. Chapter 3 outlines these procedures, skills and levels in detail. The teacher may decide that for certain aspects of the research activity, students will be at the Introductory (teacher directed) Stage, while for other aspects students might be at the Advanced Stage (student directed). Students may be at any level of this continuum as they work on a particular assignment. Samples of this approach can be found in Chapter 7.

First-time student researchers, long on curiosity but short on expertise, will require considerable teacher assistance. Because of variance in background and exposure, students may be at this introductory stage at different ages.

As they progress from the Introductory Level (teacher directed) to Advanced Level (student directed), students will become more discerning and more Independent researchers. Sharper thinking skills and an enlarged repertoire of problem-solving skills will come to the fore. Posing their own questions —

- What do I need to do? (Planning)
- Where can I get the Information? (Information Retrieval)
- What information is important? (Information Processing)
- How can I present this information? (Information Sharing)
- How did I do in this research activity? (Evaluation)

— and prepared with many of their own answers, these students will have moved a few steps closer to the truth.

Using Research

"The quality of any library media program must be judged in relation to each school's educational philosophy and its educational objectives."

Alixe Hambleton

Both the continuum of research procedures and skills, and the continuum of levels of research are flexible.

Schools should personalize each continuum, establishing student expectations for grades or division. Many Programs of Study already contain references to research skills (see Chapter 4 – Curriculum Links). These references provide effective starting points for the development of a school research continuum.

Before developing research activities, individual teachers will decide which skills to emphasize and which levels are appropriate in certain units. Teachers may have an opportunity to develop a research activity with a teacher--librarian. This cooperative approach. which is described in Chapter 5, provides students with many benefits.

In elementary classes, teachers often teach research skills in complete curriculum units (see Sample 1 – Division 1, p. 63). In secondary classes, it is common for teachers to Intersperse research skills throughout the total curriculum-emphasizing some more than others in different projects. Whrchever approach is taken, it is imperative that research skills are taught, not in Isolation, but in relation to the curriculum. Practising research skills in this meaningful context allows students **to** be **active** learners; learners growing in discernment and independence.

CHAPTER 2

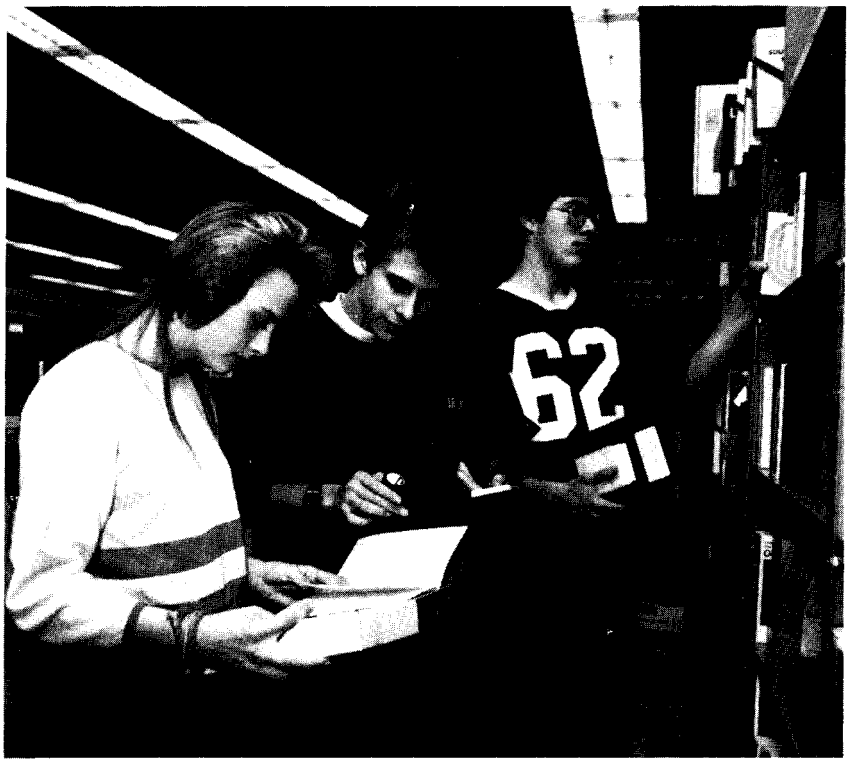
Focus

Is this chapter useful to me?

Teachers who are unfamiliar with integrating research into the curriculum will find valuable background information in this chapter.

What will I find in this chapter?

- The three key components of any research activity, student, teacher and resources are listed and described.



Focus

...On Research

What is research?

Marcus Aurelius has given us one answer:

"Research is the ability to *investigate systematically and truly all that comes under your observation in life."*

Taking the philosopher's advice, a systematic investigation of the word "research" reveals the literal meaning of "repeated (re) going over" and "looking through to find something" (a search).

Putting it all together, we can conclude that research is a process that seeks an answer to **a** question. Those systematic skills and procedures that bring the seeker closer to the answer are the focus of this document.

. ..On the Student

"If* we believe that *research* and study *skills* or information *skills or* whatever we want to *call* them *are* important, *then there must be a systematic approach to their development."

Ken Haycock

Students need research skills to shape their search for answers. A systematic approach to the development of these skills will yield students ready for independent problem solving and lifelong learning. **The key idea is to teach a process that can be transferred to any research situation.**

Students learn research skills more readily when skills:

- are integrated with curriculum;
- are taught with the focus on developing independent learners and critical thinkers;
- are viewed by students as relevant to their needs;
- are related to the students' past experiences; and
- are shared through cooperative learning.

Using these same process skills as they proceed from the primary Grades through high school will enable students to:

- become familiar with steps required for research;
- understand a framework that supports searching for information;
- internalize a variety of research procedures for independent use; and
- adapt procedures to the situation.

Focus

. ..On the Teacher and the Teacher-librarian

A school library program under the direction of a teacher-librarian, who is skilled in cooperative planning and teaching, provides the most effective environment for the teaching of research skills and procedures. Cooperation between teacher-librarian and subject area teachers in the development of effectively planned resource-based research activities ensures that students are taught the research skills as well as the subject content. However, "in the absence of a teacher-librarian, professional direction and involvement will be provided by the principal and teaching staff of the school." (Policy, *Guidelines, Procedures and Standards for School Libraries in Alberta.* Alberta Education, October 1984.)

To integrate research skills into the curriculum, the teacher and/or teacher-librarian should:

- understand skills involved in research;
- be committed to student-centred learning;
- plan for research skill and thinking skill development;
- be flexible in teaching styles;
- be aware of children's needs and capabilities: and
- adapt to new findings in learning theory and child development.

... On the Teacher-as-Facilitator-Model

As students work through the research steps, the teacher:*

- motivates students to locate, analyse and use information;
- assists students to clarify thinking through questioning, paraphrasing and talking through tasks;
- provides students with opportunities to record information;
- provides students with opportunities to focus on steps required to complete research;
- individualizes teaching;
- evaluates student progress in content and process areas;
- models research behaviours (e.g., demonstrating and modelling the problem-solving process); and
- facilitates and models questioning behaviours (e.g., providing opportunities for students to develop and ask questions).

. ..On the Resources

Resource-based research activities require access to an adequate quantity and variety of appropriate, up-to-date print and non-print resources from the school library, other libraries, the community and other sources. A wide selection of information sources expands classroom resources and allows teachers and students to meet individual learning needs and to develop competency in reading, writing, speaking, listening and viewing. Suggested minimum resource standards for Alberta school libraries are indicated in Focus *in Learning.*

Throughout this document, teacher refers to teacher and/or teacher-librarian.

CHAPTER 3

Research — The Components

Is this chapter useful to me?

The total overview of research skills and procedures is presented in this chapter. This information is useful to all teachers.

What will I find in this chapter?

- The research model
- The research skills continuum and the research level continuum

"The method of teaching which approaches most nearly to the method of investigation is incomparably the best, since not content with serving up a few barren and lifeless truths, it reaches to the stock from which they grow."

Edmund Burke

Both the research skills continuum and the research level continuum detailed in this chapter are centred on the investigative method of teaching and learning. Beginning with a thorough planning process, and ending with evaluation, the research skills continuum has at its heart the critical information skills of retrieving, processing and sharing.

STAGES	SKILLS
Planning	• Establish Topic • Identify Information Sources • Identify Audience and Presentation Format • Establish Evaluation Criteria • Review Process
Information Retrieval	• Locate Resources • Collect Resources • Review Process
Information Processing	• Choose Relevant Information • Evaluate Information • Organize and Record Information • Make Connections and Inferences • Create Product • Revise and Edit • Review Process
Information Sharing	• Present Findings • Demonstrate Appropriate Audience Behaviour • Review Process
Evaluation	• Evaluate Product • Evaluate Research Procedures and Skills • Review Process

Figure 4: An Overview of The Research Skills Continuum
See Appendix for copy-ready form.

STAGE 1: PLANNING

	Introductory Level → (Teacher/Teacher-librarian Directed)	Advanced Level (Student Directed)
Establish Topic	Teacher* develops with students an understanding of the purpose for research. Teacher determines topic or provides limited options. Teacher leads students to share experience and knowledge of the topic. Teacher may introduce topic using various resources. Teacher helps students develop and organize questions to guide research.	Students establish purpose for research. Students choose a specific topic. Students clarify the topic by examining what they already know and/or consulting a variety of resources. Students develop research questions which focus on new areas of knowledge and application.
Identify Information Sources	Teacher leads class in brainstorming for sources of information. Teacher introduces format for collecting information.	Students survey information sources in :he school and community. Students choose formats for collecting nformation.
Identify Audience and Presentation Format	Teacher determines audience and presentation formats. Students should be introduced to a variety of formats over time. Students choose audience and presentation format from limited options.	Students determine size and character ɔf audience and choose presentation 'ormats.
Establish Evaluation Criteria	Teacher makes students aware of evaluation criteria for content and process.	Students understand or help develop evaluation criteria for both process and content.
Review Process	Teacher records the research plan for the whole class. **Teacher and students reflect on the planning activities, noting specific ideas for improvement.**	Students review individual plans to guide research. **Students reflect on planning activities, noting specific ideas for transfer to other situations.**

* **Throughout this document, teacher refers to teacher and/or teacher-librarian.**

STAGE 2: INFORMATION RETRIEVAL

	Introductory Level (Teacher/Teacher-librarian Directed)	Advanced Level (Student Directed)
Locate Resources	Teacher identifies useful resources. Students are taught to use standard ocation tools such as card or :omputer catalogue, encyclopedia and nagazine indexes. Teacher guides students in the use of :able of contents, indexes, glossaries. Students are helped with the terms or ‹ey words to be used for searching.	Students use standard tools for locating nformation such as: – card or computer catalogue – encyclopedia indexes – magazine indexes – bibliographies – catalogues of non-print resources – on-line databases – telephone and other directories – community resource lists – computer databases Students generate possible search terms ɹsing standard thesaurus or subject leading lists.
Collect Resources	Teacher helps students find a variety ɔf appropriate and accessible print, lon-print and community resources such as: – books – magazines – filmstrips – videotapes – interviews, etc. Students learn routines required to borrow resource materials from their school library. Teacher shows students how to use audio-visual equipment as necessary (e.g., audiocassette recorders, videocassette recorders, overhead projectors, filmstrip viewers). Teacher and students review the materials collected and make a preliminary list of resources.	Students find a variety of appropriate ɔrint, non-print and community resources ncluding such specialized materials as: – almanacs – yearbooks – subject-specific handbooks – dictionaries – atlases – encyclopedias – periodicals – demographic yearbooks – computer databases – on-line sources – CD-ROM sources – interviews, etc. Students access resources from different libraries and outside sources (e.g., special resource collections, community resources and agencies, special libraries, professional societies and associations, service clubs, museums, galleries, science centres and other sites). Students use a variety of equipment as required (e.g., computers, laserdisc players). Students review the type and quantity of resources collected and prepare a working bibliography.

STAGE 2: INFORMATION RETRIEVAL (continued)

	Introductory Level → (Teacher/leacher-librarian Directed)	Advanced Level (Student Directed)
Review Process	Teacher discusses with students whether there is sufficient information to answer the research question. **Teacher and students reflect on information retrieval activities, noting specific ideas for improvement.**	Students determine if further information is required or if research plan needs to be revised. **Students reflect on information retrieval activities, noting specific ideas for transfer to other situations.**

STAGE 3: INFORMATION PROCESSING

	Introductory Level → (Teacher/Teacher-librarian Directed)	Advanced Level (Student Directed)
Choose Relevant Information	Students read, listen and view to gather information to answer the research questions. Instruction is provided in appropriate strategies such as: – skimming – scanning – interpreting maps, graphs and pictures – QSR (Question, Skim, Read) – TA2R (Tune in, Analyse, Respond, Review) – SQ3R (Survey, Question, Read, Recite, Review)	Students read, listen and view to gain pertinent information about the topic. Students choose and use strategies appropriate to the resources being used.
Evaluate Information	Teacher assists students to distinguish between fact and fiction. Teacher assists students to consider accuracy and currency of source. Teacher assists students to recognize adequacy of information.	Students distinguish between fact and fiction, between fact and opinion. between fact and theory. between fact and value, between hypothesis and evidence and between hypothesis and generalization. Students determine accuracy. authority and reliability of source (recognizing primary and secondary sources). Students recognize author's point of view, bias and underlying assumptions or values.
Organize and Record Information	Students make notes using words or pictures to complete a simple outline, chart or web. Teacher provides a format to record simple bibliographic information (author, title, copyright date, media type).	Students make notes using appropriate models such as diagramming, mind-mapping, retrieval charts, note cards or computer fries. Students record information needed for bibliography, footnotes and direct quotes. according to standard form.

STAGE 3: INFORMATION PROCESSING (continued)

	Introductory Level → (Teacher/Teacher-librarian Directed)	Advanced Level (Student Directed)
Make Connections and Inferences	Teacher helps students compare information from two or more sources. Teacher helps students make generalizations and state relationships between concepts. Teacher helps students combine information to answer research questions.	Students compare and synthesize information from several sources. Students develop or revise a thesis statement. Students formulate alternative answers, solutions, conclusions or decisions to research questions.
Create Product	Students prepare a presentation such as: – simple report from notes and/or a student and teacher generated outline – simple illustrations, charts or graphs – model, diorama, mural, tape recording Students may use computers for word processing. Students prepare final bibliography.	Students prepare a presentation such as: – a research paper or essay – maps, charts, graphs, pictures, illustrations or timelines – film, slides or videotape – debate, panel discussion Students use computers for word processing or preparing graphs, charts or other graphics. Students prepare final bibliography and footnotes.
Revise and Edit	Students, with the assistance of teacher or peers, review information to delete repetitive and irrelevant information. Students edit and/or rehearse presentation with teacher and peer assistance. Students check for vocabulary, sentence structure and mechanics with teacher and peer assistance.	Students re-examine information for relevance to intended focus and format. Students edit with peer assistance. Students check for coherence and mechanics.
Review Process	**Teacher and students reflect on the information processing activities, noting specific ideas for improvement.**	**Students reflect on information processing activities, noting specific ideas for transfer to other situations.**

STAGE 4: INFORMATION SHARING

	Introductory Level → (Teacher/Teacher-librarian Directed)	Advanced Level (Student Directed)
Present Findings	Students present information to a partner or small group within the school. Students demonstrate presentation skills with attention to format, purpose and audience (e.g., quality, layout, titles, colour, spacing, visibility, volume, clarity, vocabulary, expression, introduction, conclusion, evidence of rehearsal).	Students present to individuals, groups, classes within school and to individuals and/or groups out of the school. Students demonstrate increased presentation skills for sharing information with attention to format, purpose and audience by also including pitch, enunciation, pace, handling of questions and technical understanding.
Demonstrate Appropriate Audience Behaviour	Students demonstrate appropriate social skills. Students ask appropriate questions. Students respond in written form to presenter. Teacher and students make positive, constructive comments.	Students demonstrate empathetic listening behaviours. Students demonstrate an ability to develop follow-up inquiries. Students respond to or summarize a presentation in paragraph or point form.
Review Process	**Teacher and students reflect on sharing activities, noting specific ideas for improvement.**	**Students reflect on sharing activities, noting specific ideas for transfer to other situations.**

STAGE 5: EVALUATION

	Introductory Level (Teacher/Teacher-librarian Directed) →	Advanced Level (Student Directed)
Evaluate Product	Teacher uses pre-established evaluation criteria throughout the research stages, skills and procedures. Students are provided with tools for peer and self-evaluation.	Teacher uses a variety of evaluation criteria throughout the research stages, skills and procedures. Students use pre-determined criteria for peer and self-evaluation.
Evaluate Research Procedures and Skills	Teacher assesses the extent to which research plan was followed. Students take part in conferencing with peers, teacher and/or teacher-librarian, using criteria such as time management, group participation skills and cooperative learning skills. Teacher assesses individual and group participation skills.	Students, individually or with peers, identify and evaluate research steps. Students take part in conferencing with peers, teachers and/or teacher–librarians.
Review Process	Class selects one or two suggestions for improvement to apply to other research activities. **Teacher and students reflect on the complete research process, noting areas of strength and ideas for improvement.**	Students analyse teacher, peer and self-evaluation to identify strengths and areas for improvement. **Students reflect on the complete research process, noting specific ideas for transfer to other situations.**

CHAPTER 4

Curriculum Links

Is this chapter useful to me?

Teachers who would like to know more about research skills as an integral part of most Programs of Study should read this chapter.

What will I find in this chapter?

- A listing of some of the references to research skills found in Programs of Study at all grade levels

There are many reference sources for skill development in the research process in different Programs of Study. Only a **few** of these references are included here as examples, but these references may be used by schools as a starting point for developing their own research skills continuum.

Elementary Programs of Study

SOCIAL STUDIES 1989

The student will:

- locate information using library skills to choose appropriate resources for research;
- organize information on a topic using a simple outline, webbing, retrieval chart, etc.;
- in a final written product, apply the skills of revising and editing by considering content, organization, vocabulary, sentence structure and mechanics of writing;
- use a computer database to collect and organize information.

SCIENCE 1984

The student will:

- appreciate the importance of collecting and organizing data;
- compare alternate energy sources (e.g., solar, wind and nuclear energy). Gather, organize and interpret data and infer the effects of use on the environment.

LANGUAGE ARTS 1990

Under development at time of printing, Spring 1990.
The proposed framework is a language learning model in which students:

- explore;
- construct;
- ccommunicate.

MATH 1982

- identify needed information;
- identify relationships;
- ask questions.

Junior High Programs of Study

LANGUAGE ARTS 1987

- Locating, selecting and evaluating information are important life skills (Statement of Content, “Concept 30”).
- Listening is an active process that involves constructing meaning (Statement of Content, “Concept 5”).
- Visual communications possess distinctive elements and structures which may affect meaning (Statement of Content, “Concept 1 1 ").
- Effective editing involves revision for the purpose of evaluating ideas and further shaping of the composition (Statement of Content, “Process Skills”).
- Students should be able to evaluate contribution to the group process (Statement of Content, “Skills 2”).

SOCIAL STUDIES 1989

The student will be able to do the following:

- observe the courtesies of group discussion..., contribute to the group...(“Participation Skills”);
- acquire information to find answers to questions through listening, observing, reading and utilizing community resources (“Process Skills”);
- identify and define topic, identify possible sources and location of information (“Process Skills”);
- compare information about a topic drawn from two or more sources..., categorize information to develop concepts... (“Process Skills”).

GRADE 7 SCIENCE 1989

- An overall strategy for decision making includes the skills of researching perspectives, organizing and processing information, and evaluating.

Senior High Programs of Study

LANGUAGE ARTS 1982

- Locating, selecting and evaluating written materials, frequently required to fulfill one's purpose in reading, are more important life-skills.
- Listening is an active, not a passive process.
- An effective reader is able to select and use a variety of reading strategies appropriate to his purpose.
- Effective revision involves careful evaluation of ideas and a further shaping of the composition.

HOME ECONOMICS 1983

- Students will develop skills and techniques in personal decision-making and interpersonal relationships.

SCIENCE 1984

- Questioning, proposing ideas, gathering data, processing data and interpreting data are all components of the...(Process Skills Framework).
- Students will be expected to demonstrate an ability to classify existing information by examining parts and relationships and to identify and distinguish components, attributes, claims, assumptions or reasons by:
  a) interpreting data or information
  b) judging the reliability or validity of the data or information
  c) identifying errors
  d) distinguishing between facts and values, relevant and irrelevant information
  e) identifying main ideas
  f) identifying attributes and components
  g) identifying relationships and patterns
  h) identifying perspectives
  i) detecting bias and inconsistencies in a line of reasoning.

ART 1987

- The student will analyse personal responses to visual imagery .

ALBERTA EDUCATION PROGRAMS OF STUDY

Focus on Research	Social Studies	Science	Mathematics	Language Arts'
Stage 1: Planning	Understand the question/problem Develop research questions and procedures	Identify the issue Identify alternatives	Understand the problem	
Stage 2: Information Retrieval	Gather and organize information	Research		
Stage 3: Information Processing	Interpret information Develop a conclusion or solution Synthesize data	Reflect and decide	Develop a plan	
Stage 4: Information Sharing	Communicate effectively	Take action	Carry out the plan	
Stage 5: Evaluation	Evaluate the decision and the process	Evaluate	Look back	

Relating Research Skills to the Four Core Academic Curricula

* Note: Includes 1990 amendments.

* Note: Language Arts is under development, Spring 1990.

CHAPTER 5

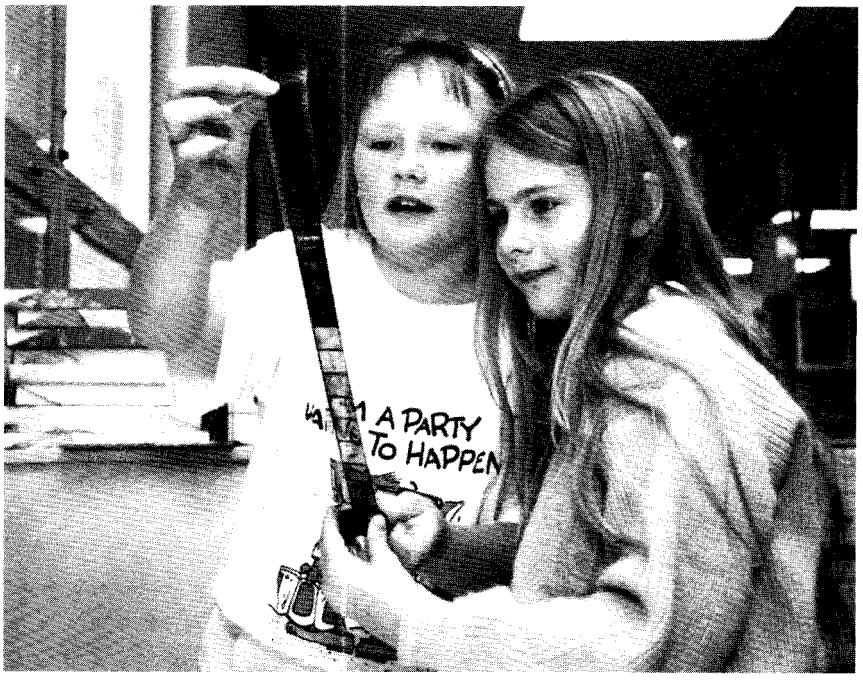
Before Research—Teacher Preparation

Is this chapter useful to me?

Teachers who are inexperienced in integrating research activities into their curriculum will find this chapter useful in their planning.

What will I find in this chapter?

- How to plan a research activity
- Guidelines and considerations for a research activity
- A sample research activity unit plan



"Planning is a* way *of caring, because it minimizes the risk."

Ken Haycock

How do we link the pieces of the research skills puzzle together? Careful planning and judicious use of some key concepts, suggestions and forms will bring this puzzle closer to completion.

Many Teacher Resource Manuals (TRMs), for example, contain suggestions that dovetail with the stages of research. This chapter presents ideas for planning research and a sampling of curriculum-based suggestions-suggestions that will help you put theory into practice.

Integrating research into the curriculum is evolutionary. For teachers who are new to integrating research activities, it begins slowly. As teachers and students experience positive development in teaching methods and skills, their commitment to integrating research skills will increase.

How Do I Work With Someone Else to Initiate Research?

The ideal situation for developing a research unit occurs when team-teaching or cooperative planning occurs between a teacher-librarian and teacher or between teachers. The following description of cooperative planning has been adapted from the Social Studies Grades 4-6 TRM p.74, 1989:

Cooperative Planning

Teacher-librarian/leacher Planning

Cooperative planning of a unit or mini-unit involves **a** teacher and a teacher-librarian and uses the library as a primary resource. The first step is to set out objectives for the unit and plan the activities with the teacher-librarian. The use of library skills should be integrated into the plan. The extra resource person allows for variations in group size (e.g., whole group, two teaching groups, small groups).

An example from Topic 4C, in which students are expected to learn about the similarities and differences between Alberta and Quebec, shows some of the possibilities for cooperative planning:

1. Students get together in groups and come up with a list of similarities and differences between Alberta and Quebec. The teacher and teacher-librarian circulate to assist students. Then, as a class, the students come up with a composite list. The composite list is in turn grouped into categories such as geography, resources, occupations, leisure activities, language and customs. A wall chart of the categories is made by the teacher or teacher-librarian during the discussion. The students reproduce it in their notebooks.
2. The teacher and teacher-librarian (team-teaching) explain to students that they will complete their chart as they work through the four stations (see below).
3. Groups of three to five students proceed to stations where they gather information for their chart. The teacher and teacher–librarian circulate and help the students.

e.g.,

Viewing Station	Listening Station
pictures	audiotapes
filmstrips/videos/films	recorded interviews
	recorded stories or articles
Interviewing Station	**Reading Station**
resource people	reference books
	articles from magazines

Teacher/Teacher Planning

Cooperative planning of a unit or mini-unit with a colleague or a team of teachers should be approached in the same manner as with the teacher-librarian, except that two or more classes are now involved. In the team-planning approach, each teacher brings special talents that can be used. The team approach also divides the labour and lightens the workload. After the unit planning is complete, each teacher adapts the unit to the needs of the students.

What If I'm All Alone?

Teachers who are new to integrating research are advised to focus on the teacher directed approach to implementing research activities. A research activity does not have to include all stages and skills. For example, a teacher can provide information related to the planning stage to students and then have students practise the Stage 2: Information Retrieval skill of "Locating Resources." This approach is an effective beginning to research activities **only if the skill is integrated with classroom activities.** For example, if a class is studying dinosaurs, students could be asked to locate the various types of resources (print, non-print and human) which are available in their school and/or community. In this situation, students must be given instruction in how to locate different types of resources. In another class, the resources could be gathered ahead of time and students could be -taught information processing skills, or another aspect of the research continuum.

I'm Hooked, How Do I Start?

Curriculum objectives, student needs, resources and research skills must all be considered when planning for research (see Figure 4).

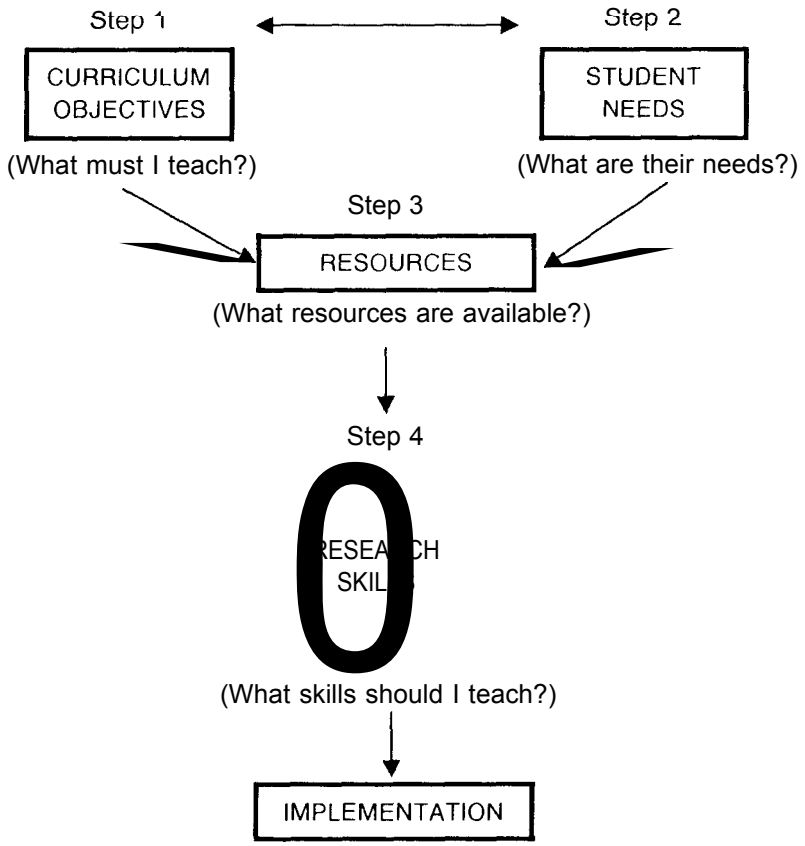


Figure 5: Preparing for Research

Some steps that mirror the research model and stages, and that have proven to be successful when implementing an Introductory Level (teacher directed) research activity are:

Stage 1: Planning

1. Decide in which unit you will begin your research breakthrough;
2. Decide on the scope and end-product of the research activity;

Stage 2: Information Retrieval

3. Select appropriate resources and plan for their use. The research activity may have to be redefined at this point to take into account available resources.

Stage 3: Information Processing

4. Determine the order in which the unit and research activity will be taught;
5. Determine which research skills will be stressed;
6. Decide where (classroom, library, etc.) the activity will occur;

Stage 4: Information Sharing

7. Introduce the activity to the class as an integrated part of classroom studies;
8. Monitor the students' work as they apply related research skills;

Stage 5: Evaluation

9. Evaluate student work on an on-going basis and determine the appropriateness and availability of resources, and the success of the research activity. Encourage student self-evaluation on an on-going basis;
10. Decide on methods of improving the objectives of the assignment–focus on increasing students' autonomy.

What Do You Have to Help Me With My Research Activity?

The Junior *High* Social Studies TRM 1989, p. 11 provides the following suggestions for initiating a research activity:

LIBRARY RESEARCH

Students need to be **taught** how to gather information, not just assigned a task. Students should be given practice developing research questions by doing it as a class and proceeding to students thinking up their own. Two important steps in researching are:

- compile questions before research
- answer questions in own words (**not** copied) or make notes in point form (unless footnote)

By teaching students how to do written assignments — both the research and the writing — plagiarism may be eliminated.

1. Planning
   - choosing a subject
   - develop questions for research (who, why, what, where, when, how)
2. Identifying sources of information
3. Locating and gathering information
   - print, non-print
4. Reading – interpreting
   - main/related ideas
   - relationships
   - cartoons, pictures, charts, tables, graphs
   - maps
5. Listening and viewing – interpreting
   - point of view
   - purpose/message
   - bias/slant
6. Organizing information
   - classify, categorize, sequence
   - notetaking or notemaking (answers to research questions written in "student's" own words – not copied! or in point form)
   - webbing, mind mapping or charting
7. Analysing, evaluating and summarizing information
   - develop conclusions, generalizations
   - make decisions

What Do You Have to Help Me With My Research Activity? (continued)

The following checklist will assist teachers in determining the focus of a research activity. These considerations should be used to design research activities which include all research stages and skills, or they can be used for research activities which focus on a smaller component of the research skills continuum. See Appendix for a copy-ready form.

TEACHER GUIDE FOR PLANNING RESEARCH - A CHECKLIST

A. Guidelines and Considerations

The Assignment
- _____ Curriculum fit
- _____ Format
- _____ Research procedures to be taught
- _____ Evaluation
- _____ The purpose
  - ____ a) to introduce
  - ____ b) to review
  - ____ c) to expand information and knowledge
  - ____ d) to focus (e.g., general information, subject specific, opinion, issue based)

The Students
- _____ Ability and stage of development
- _____ Learning preferences
- _____ Social groupings
- _____ Cooperative learning skills

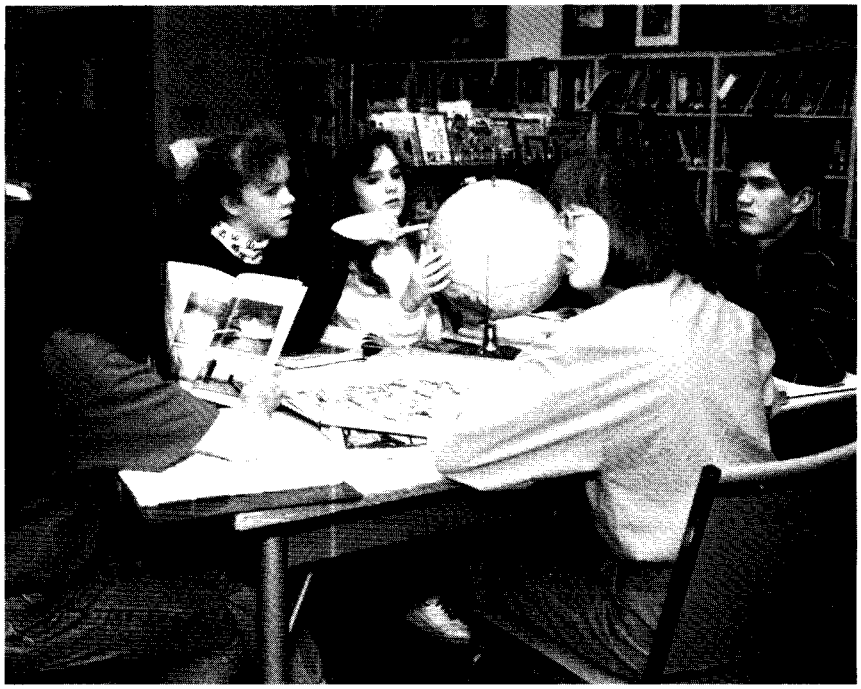
The Resources
- _____ School library
- _____ Other libraries
- _____ Teacher-librarian
- _____ Other resource people
- _____ Community
- _____ Other

B. **Goals**

Concepts
- _____ to apply or practise research procedures
- _____ to improve decision-making ability

Skills
- _____ to plan for research
- _____ to work in a variety of social situations
- _____ to support a personal opinion

Attitudes
- _____ to develop an appreciation for knowledge and culture
- _____ to recognize that a variety of opinions exists
- _____ to develop cooperative learning skills
- _____ to experience pride in creating a product
- _____ desire to improve future efforts
- _____ to understand and value effective research procedures
- _____ to appreciate need for lifelong learning skills



What Else Do You Have For Me?

Planning a research assignment that includes all research stages and skills involves several steps.

Teachers may find the following "Sample Research Activity Unit Plan" useful. Not only does it outline a unit teaching plan, but it also provides signposts to be aware of when considering a research activity. It includes planning procedures for the teacher and activities for students. Please note that this sample provides a research activity plan that involves all five research stages and most of the skills from the research model. (Depending on your level of "risk-taking," you may or may not decide to use the total approach in your own first research activity.) A copy-ready planning form is provided in the Appendix, and can be used for any research activity, regardless of level or skill emphasis.

SAMPLE RESEARCH ACTIVITY
UNIT PLAN

SUBJECT: Language Arts and Health

THEME: Foods

TIMELINE: 3 weeks – 1 hour per day

GRADE: *3*

Stages	Time	Strategies	Resources
Stage 1: Planning			
A. Establish Topic	30 min.	A. – Brainstorm list of foods. – Brainstorm and categorize food research questions focussing on: a) where it comes from b) how it is prepared c) how it is stored and delivered. – Provide samples of soya beans, rice, wheat, etc. for added student awareness.	Teacher Hints: Collect these video resources (**Other Learning Resources)*** for Stage 3: *Harriet's Magic Hats:* *Pasta Maker* *Soybeans: The Wonder Beans* *Bread* *What Was It Before It Was Bread?* *What Was It Before It Was Ice Cream?* *A Loaf of Bread* *Peanuts* *The Rice Farmer*
B. Identify Information Sources	30 min.	B. – Brainstorm likely information sources. – Browse through sources. – Students select food to study and locate at least two sources.	
C. Identify Audience and Presentation Format	30 min.	C. List presentation formats (posters-review; mobiles-new; illustrated report-review; diagram-review).	Collect print resources on cart for student use.
D. Establish Evaluation Criteria	20 min.	D. Brainstorm and list by priority the evaluation criteria.	
E. Review Process	20 min.	E. – Review research plan with students to identify the important steps in planning. – Check each student's source list.	

* The titles of the student learning resources identified above were provided through the courtesy of Elaine Blakey and Duncan Anderson, Red Deer School District 104. This listing is not to be construed as an explicit or implicit departmental approval for use. These titles are provided as a service only to assist local jurisdictions to identify resources that contain potentially useful ideas for teachers. The responsibility to evaluate these resources prior to selection rests with the local jurisdiction according to local policy.

Sample Research Activity Unit Plan (continued)

Stages	Time	Strategies	Resources
Stage 2: Information Retrieval			
A. Locate Resources	20 min.	A. Review use of table of contents, index.	Teacher Hints:
B. Collect Resources	20 min.	B. Instruct students how to: – load previewer – care for filmstrips – use VCR – use audiocassette recorder.	Gather AV equipment for demonstration.
C. Review Process	20 min.	C. – Review what was learned about locating information. – Elicit suggestions for different resources. Mark preliminary list of resources for each student to ensure adequate resources.	
Stage 3: Information Processing			
A. Choose Relevant Information	20 min.	A. Review notetaking by modelling how to select information on a sample food. (Use notetaking sheet on overhead.)	Teacher Hints: Use resources from previous page.
B. Evaluate Information	3 hours	B. Distribute notetaking sheets and have students begin to gather information.	Set up: VCR Filmstrip and audiocassette.
C. Organize and Record Information	1 hour	C. Assist students individually as needed.	
D. Make Connections and Inferences	1 hour	D. Target individuals who need special help or extension (individual and small group work).	Get poster paper, bristol board, craft supplies, transparency sheets.
E. Create Product	1 hour	E. Students draft presentation format.	Locate “editing table”.
F. Revise and Edit	I-2 hours	F. – Review editing skills – focus on content. – Students provide answers to all three questions. – Students prepare final draft (I-2 hours). – Evaluate written product.	
G. Review Process	20 min.	G. Review what was learned and discuss transferability.	

Sample Research Activity Unit Plan (continued)

Stages	Time	Strategies	Resources
Stage 4: Information Sharing			
Present Findings	10 min. 20 min./day 4-5 days	A. – Review presenter and audience skills. – Students practise presentation with a buddy. – Students present information (3 or 4 per day). – Focus on positive comments and/or questions. – Teacher evaluates.	Teacher Hints: Book library for presentations. Arrange: – table for demonstration – overhead projector.
Demonstrate Appropriate Audience Behaviour		B. Students respond in written form.	
Review Process	20 min.	C. Review skills and strategies for presenting, and discuss their further application.	
Stage 5: Evaluation			
Evaluate Product	50 min.	A. Evaluate throughout assignment.	Teacher Hints:
Evaluate Research Procedures and Skills		B. Review steps in research.	Revise checklists and evaluation criteria used for the project.
Review Process		C. – Elicit what was learned during the research activity. – Focus on skills and strategies (both social and research). – Discuss how these skills and strategies will transfer.	

What About More Directed Help for My Students?

When a teacher develops a research activity that includes all stages and skills, students are often asked to provide a plan for their research. This plan:

- requires the student to summarize major procedures that he or she will follow in researching a topic.
- contains those elements that are determined by the teacher or teacher-librarian and those determined by the student.
- provides reference points to guide student research.
- serves as a checklist for teacher or teacher-librarian to ensure that it is appropriate and that the student has a good chance of succeeding.
- gives a focus for self-evaluation procedure.
- includes such information as:
  - student's name and grade
  - study theme
  - topic or thesis statement
  - sub-topics for research
  - resource needs
  - subject headings and cross references for search
  - final presentation format and materials and equipment needed
  - guidelines or requirements
  - intended audience (e.g., teachers, individual students, various groups in class or school, individuals or groups outside school)
  - evaluation criteria for process and content
  - timelines
  - approval (if required) through conferencing with teacher or teacher-librarian.

The following sample student research plan form has been developed by teachers who are experienced in integrating research. A blank planning form is found in the Appendix.

SAMPLE STUDENT RESEARCH PLAN
STAGE 1: PLANNING

NAME/SUBJECT/GRADE: Rob Matherson/Language Arts/Grade 7
THEME: Communication/Messages

ESTABLISH TOPIC

Topic Statement : I'm going to research how dolphins communicate. I will find out how they make and receive sounds and what the sounds mean. I will also cover research being done with dolphins and how it might help man to communicate with them.

Sub-topics:
1. Dolphins – Message Sending
2. Dolphins – Message Receiving
3. Research with Dolphins
4. Man/Dolphin Communication

Subject Headings: Dolphins, Porpoises, Animal Communication, Mammals, Oceans, Marine Life?

IDENTIFY INFORMATION SOURCES

Resources:
Books in school library
Magazines
Videos/Films
Dolphin trainers

IDENTIFY AUDIENCE AND PRESENTATION FORMAT

Presentation Format and Needs:
Poster board (assigned)
Instructions with assignments, write up and 3-5 minute talk
Need markers, glue or tape, get poster board from teacher or teacher/librarian

Audience:
Three other students in class (teacher to pick)
Teacher

ESTABLISH EVALUATION CRITERIA

Guidelines: 200-250 word minimum, illustrations, bibliography, poster board, 5 questions

Evaluation:
a) notes – 10% (teacher)
b) plan – 10% (teacher/teacher-librarian)
c) poster board – 20% (teacher-librarian)
d) presentation – 20% (other students and self)
e) information and language arts skills – 35% (teacher)
f) bibliography – 5% (teacher)

Timeline:
a) start - November 4
b) topic or sub-topic - November 5
c) research done - November 8
d) rough copy - November 12
e) final copy - November 14
f) presentation - November 15

Checked and Approved: D. Fielding November 5, 1989

CHAPTER 6

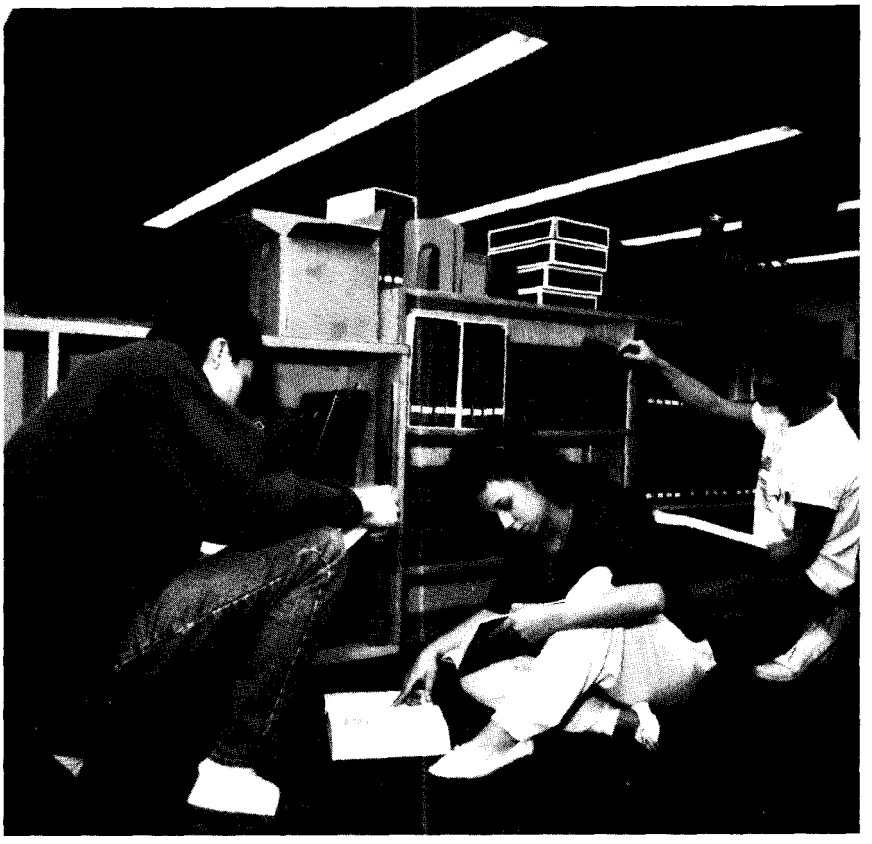
Putting It Into Practice

Is this chapter useful to me?

Teachers who are experienced users of research activities may find that they are already familiar with some of the following suggestions. Teachers who are just beginning to integrate research into their classroom program may find useful ideas in this material.

What will I find in this chapter?

- Samples of activities which can be used to implement each research stage



"Research means to give each and every element its final value by grouping it in the unity of an organized whole."

Teilhard de Chardin

The pieces of the research puzzle are falling into place. You now have an overall perception of both the continuum of research stages and the continuum of research levels, the benefits of research, and some of the planning steps which will make a classroom research activity successful. It is time to provide concrete examples of teaching and developing the skills found in the different research stages. These examples from Teacher Resource Manuals (TRMs) may help you decide where and when you wish to initiate a research activity. Many more examples of specific skills exist in TRMs, but the following are included to provide a broad range of teaching ideas.

STAGE 1: PLANNING

Brainstorming
(from Junior *High* Social Studies TRM 1989, p. 54)

To be effectively prepared for the information handling parts of a research activity, students must use many skills and strategies in the Plannning Stage. This example demonstrates one strategy that can be used.

Brainstorming is an effective strategy that students can use to establish a topic and determine information sources.

BRAINSTORMING STRATEGIES

Oral Strategy:

Students list, briefly and rapidly, as many thoughts as possible on a given topic, problem or issue.

Explain the purpose, procedure and outcome of brainstorming.

Purpose: To collect and create ideas on a topic, problem or issue

Procedure:

- count all answers
- record all ideas, without comment/criticism (quantity not quality)
- keep stretching
- expand on others' answers ("hitchhike" on ideas)
- set a time limit and stick to it

Outcome: A list of many items offering a broad overview. Items may be grouped in different categories. Students may wish to rank items by priority depending on the activity.

Written Strategy:

All members of the group work in parallel, instead of in sequence, by writing down as many ideas as they can think of on a given topic, problem or issue. The participants read what others have written and take time to reflect on ideas, without interference.

Procedure:

- allow no conversation
- write down all ideas
- exchange sheet of ideas with another group member
- read ideas of other participants and add any new ideas
- continue this process whereby each person is either reading ideas of other participants or contributing to the pool of ideas
- continue process until time runs out or the group exhausts its ideas.

STAGE 2: INFORMATION RETRIEVAL

Students must be able to select and use retrieval strategies that suit specific research assignments. These three examples of strategies for retrieving information provide guidelines and tips to teachers to ensure a successful experience.

Interviews
(from Junior High Social Studies TRM 1989, p. 177)

Using an **interview** format, students can talk to a number of people to ascertain public awareness and opinions about the need and desirability for technological changes, and whether they consider that governments should take the lead in these changes. Ensure that the questions are brief and phrased to elicit responses that can be readily presented and assessed. Record the answers in the form of bar graphs.

Here are some things to keep in mind when you prepare for an interview:

- Identify the purpose.
  When contacting the person to be interviewed, state clearly who you are, what your purpose is, how long the interview will take and what the format will be. The place and time should be convenient to the person being interviewed.
- Be a good listener. Your job is to find out what that person knows and not to tell that person what you know.
- Ask brief questions one at a time.
  Avoid questions that can be answered with a simple “yes” or “no.”
  Don’t write out all your questions in advance. Write down short phrases or words that will jog your mind and keep the interview moving. Formulate your exact questions on the spot.
- Listen to the answers. Don’t worry about the next question. The answers will flow into the next question as part of the normal development of a conversation.
  Give the interviewee time to think. Don’t cut the subject off or rush into a new issue before the old issue has been fully discussed.
- Avoid leading questions like “Don’t you think the government is wasting tax money by ...?"
- Take notes (or use a tape recorder if the person agrees), but be as inconspicuous as possible.
- Evaluate the interview (advantages and disadvantages of process and how it can be improved).
- Review your notes as soon as possible after the interview and synthesize information (chart or mind map or paragraph).
- Send a thank you letter.

STAGE 2: (continued)

Field Studies
(from *Social Studies Grades 1-3* TRM 1989, p. 89)

Field studies are an important part of a unit. They can be used as an introduction, information source or culmination. It is important that the field study has a purpose and provides a learning experience. Because a field study entails leaving the school, there are always numerous details that must be taken care of. Below are two planning stages that should be considered.

1. **Pre-Field Study Planning**
   Make sure:
   - adequate background knowledge is developed.
   - ideas and objectives are developed.
   - related materials (films, pictures, books) are available.
   - follow-up activities are planned.
   - approval of administration has been given.

2. **Arrangement of Field Study**
   - Decide where you are going and why you are going.
   - Arrange field study and get confirmation.
   - Arrange transportation and get confirmation.
   - Distribute and collect parental permission forms.
   - Plan field study activities.

Make a field study booklet in which students can record their observations during the field trip (this may even include activities for the bus ride to and from the field study destination). A booklet of activities (approximately 10 x 14 cm) can be stapled onto heavy cardboard. A pencil can be attached to the cardboard using a string. The booklets can be taken off the cardboard after the field trip and the cardboards can be used again. An example of four activity sheets from a field study of one's own community (Topic 2A) is shown below.

Student Activities Booklet

What services/facilities does our community have?	What do people do for fun (recreation)? Draw a picture to show your favourite type of recreation.
Find an example of people working together (cooperating). Describe.	What did you learn? What did you find most interesting?

STAGE 2: (continued)

Retrieval Chart
(from *Junior High Social Studies* TRM 1989, p. 63)

The purpose of a retrieval chart is to provide a quick, organized method of gathering or organizing data. It is meant to be brief and concise so that only essential data are recorded. It allows for students to compare and extract data more easily in order to arrive at conclusions and form generalizations.

SAMPLE RETRIEVAL CHART

	JAPAN THEN	INFLUENCE	JAPAN NOW
OCCUPATIONS			
FAMILY STRUCTURE			
GOVERNMENT			
CLOTHING			
TECHNOLOGY			
BELIEF SYSTEM			
EDUCATION			
FOOD			

Which aspects of Japanese culture appear to have been retained?
What are the main influences that have caused change?
What are the main areas of change?

General Conclusions Concerning Change:

1.

2.

3.

STAGE 3: INFORMATION PROCESSING

Students need to interpret and synthesize information in a variety of ways. The following examples highlight important synthesizing skills.

Reading Tables, Graphs and Diagrams
(from *Junior High Social Studies* TRM 1989, p.77)

There are many skills required to read tables, graphs and diagrams. Students need instruction to develop these skills and to understand graphics. Graphics need to be carefully looked over, read and interpreted on a regular basis. This means students need to see tables, graphs and diagrams more often and in greater variety than afforded by the limited numbers found in most textbooks.

Reading Tables – To gain information from a table, one must know the purpose of the table, be able to locate information by following lines until they intersect and draw conclusions from the information presented. To develop skills for reading tables, ask questions similar to the following:

1. What is the title?
2. What units of measurement are being used?
3. What are the column headings?
4. What are the side headings?
5. Where do the lines intersect? What does this tell us?
6. How can you use this information?

Reading Graphs (bar, circle, line, picture) – To gain information from a graph, one must know the purpose of the graph, determine the units of measure, summarize and infer meanings. To develop skills for reading graphs, ask questions similar to the following:

1. What type of graph is being used?
2. What information is presented? What is the main idea?
3. What is the unit of measure?
4. What symbols are used? What does each one mean?
5. What is the importance of the information presented?

Some common graphing flaws that can result in distortion of facts are: oversimplified graphs, symbols that differ in size or shape, graphs presented on distorted grids, scales that do not begin with zero and graphs that show irregular increments.

Reading Diagrams – To gain information about a diagram, one must be able to identify the parts and see the relationships among them. To develop skills for reading diagrams, ask questions similar to the following:

1. What is pictured in the diagram?
2. What is the location of the different parts?
3. What are the relationships of the separate parts?
4. Why has the diagram been included?

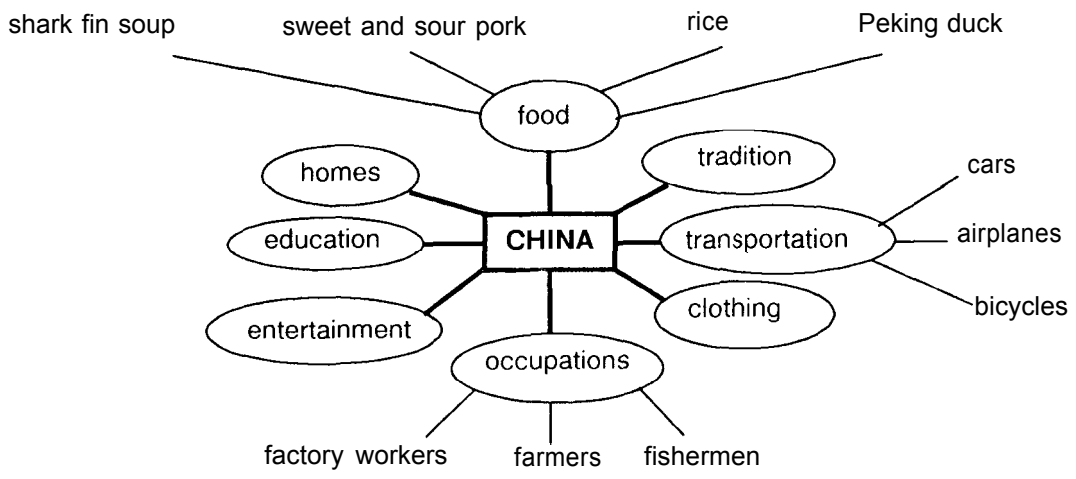
Webbing
(Mind Maps)
(from *Social Studies Grades 4-6* TRM 1989, p. 93)

Webbing is an effective way of organizing ideas and providing an overall view of a subject or issue. It can be used by teachers or students as a brainstorming or categorizing activity in the form of words and/or pictures. Place the main idea in the centre of the area being used. Place responses or ideas around that central idea. Colours, bubbles, arrows and wavy lines can be used to highlight significant information.

Example: Topic 6C

Say: We're going to study about how the Chinese meet their needs. Before we discuss what we already know about China, let's review the different needs.

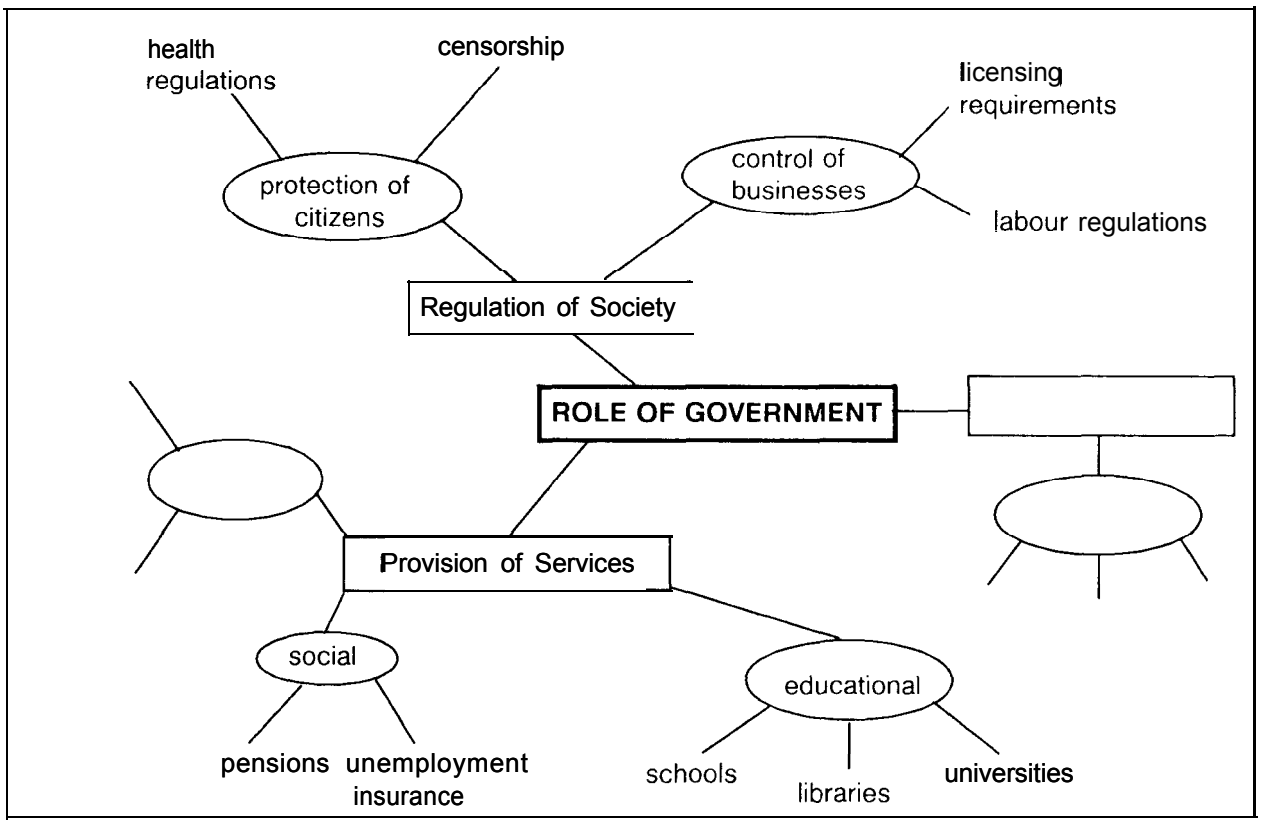
As students identify the different needs, make a large bulletin board mind map similar to the one shown below. When students share what they already know about China, add it to the mind map. As students research and share new information throughout the unit, continue to add or have students add to the mind map.



STAGE 3: (CONTINUED)

Webbing (continued)
(from *Social Studies 10/13 Interim* 1988, p. 37)

As **a** summary, students could individually or as a class create a webbing diagram to organize the categories, possible sub-headings and some examples. The teacher may have to illustrate for students how **a** webbing diagram is created before completing this section. A partial possible diagram is shown below.

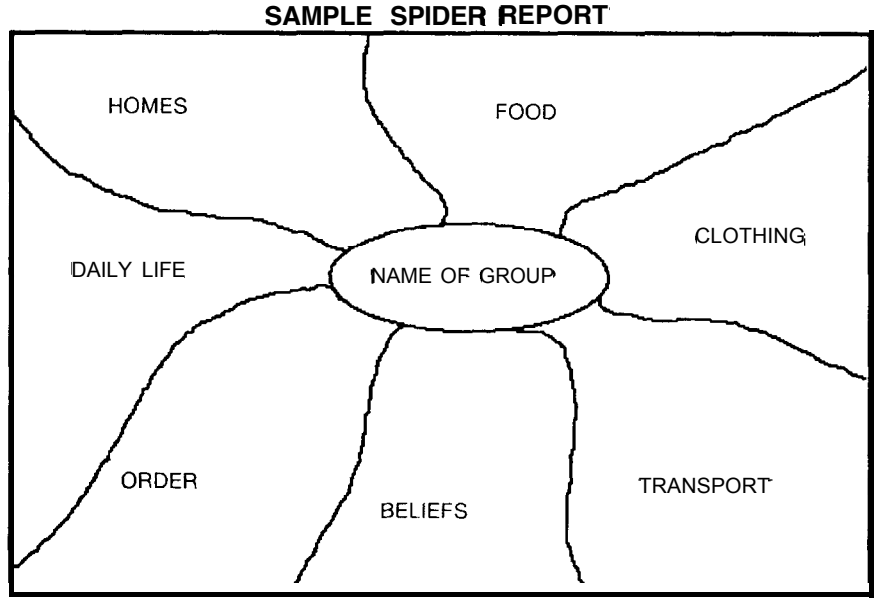


STAGE 3: (continued)

Develop Research Procedures (from *Social Studies Grades 4-6* TRM 1989, p. 238)

Elicit the various categories or topics that help study a Native group (i.e., the necessities; food, shelter, clothing; daily life; beliefs; keeping order). Apply these headings in the form of a "spider" report to the study of three major eastern Canadian Native groups at the time: Algonquins, Hurons and Iroquois. Students can research a chosen Native group using available resources (individually or in groups). Information gathered can be recorded on a spider report sheet.

SAMPLE SPIDER REPORT



Using the information gathered on the spider report sheets, students can prepare and share their information. Information can be shared with a partner if the research was carried out individually and shared with another group if a group researched the information. Students can complete a spider report sheet on Native groups not researched or students can develop a retrieval chart using information collected and shared.

SAMPLE RETRIEVAL CHART OR BULLETIN BOARD CHART

	HOMES	FOOD	TRAVEL	CLOTHING	DAILY LIFE	BELIEFS	OTHER
Algonquins							
Iroquois							
Hurons							

STAGE 4: INFORMATION SHARING

How do students share the information they have gathered, shaped and analysed? The term paper is only one way of sharing information. Teachers should encourage students to develop a broad and creative repertoire of presentation formats and techniques. See Sample 4 — Division 3, p. 71, for further ideas on this topic.

Record Sheet
(from *Social Studies Grades 4-6,* TRM 1989, p. 142-143)

WATER

From where does our water come?	
Where is it located in Alberta?	
How was water used in the past?	1
How is water used today?	
How is water transported?	
Other interesting facts.	

Provide information on water in a variety of **ways** using resources available (e.g., readings, pictures, charts, guest speakers, field studies, films, etc.). Have students complete their record sheet.

On completion, as a class record information gathered on a large wall chart that reflects the questions on the student record sheets. Then have students add any additional information to their own record sheets.

When the information is collected, discuss ways of sharing this information.

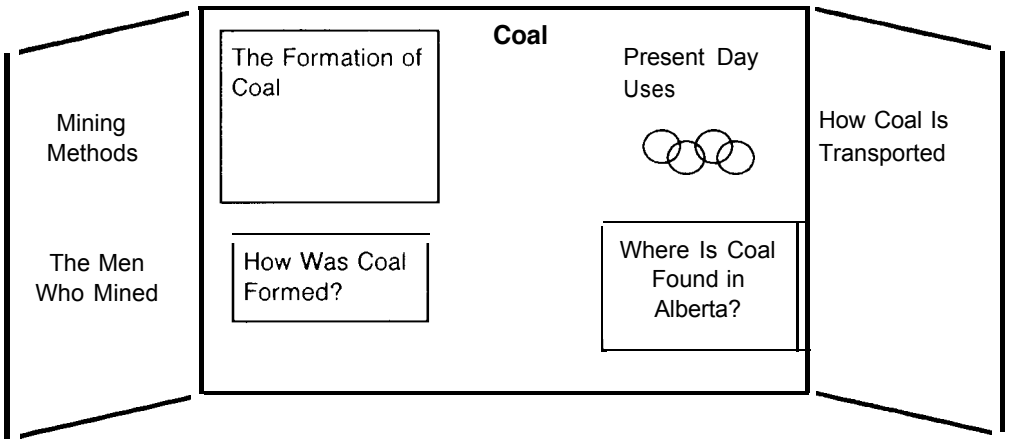
e.g., written reports, audiotapes, illustrations, collages, cartoons, murals, pictures, maps, etc.

Have each student present information that answers one of the questions researched using a means of his/her choice.

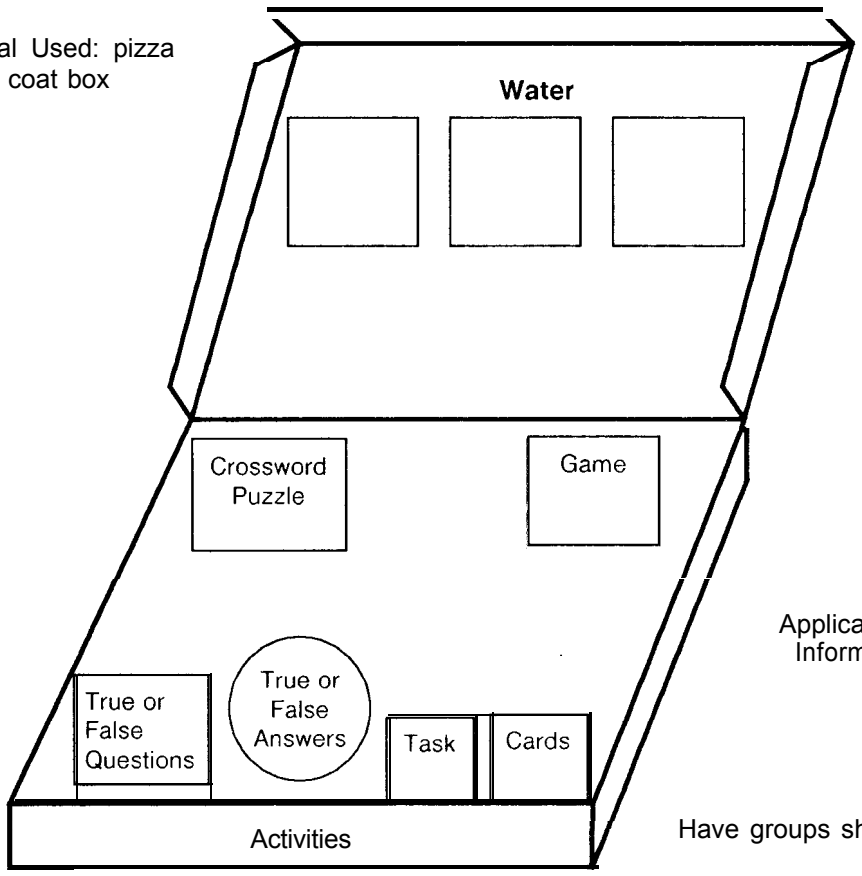
STAGE 4: (continued)

Display Boards
(from Social *Studies Grades* 4-6, TRM 1989, p. 142-143)

Divide the class into pairs or small groups. Have students choose a natural resource, either renewable or non-renewable for an in-depth case study. Students are encouraged to use a variety of methods to present their information.



Material Used: pizza box or coat box



Gathered Information

Application of Information

Have groups share their information.

STAGE 4: (continued)

Debating
(from *Junior High Social Studies* TRM 1989, p. 165)

Debating is more formal than discussion. It is a contest between two teams who test their skill in argument to win the audience's support. Debating follows rules of procedure.

CHARACTERISTICS:

- It is competitive.
- It requires that the participants take a position, either affirmative or negative, which cannot be changed.
- It is more formal than discussion and follows rules of procedure.
- It is objective
  - start with a proposal
  - make the best case for it
  - win approval for that side.
- The style is argumentative and persuasive.

RULES:

The subject

1. It must have two sides, both of which are capable of being argued.
2. To avoid confusion, it must be worded positively, not negatively.
3. It should be stated clearly and briefly.

The debaters

1. The side that supports the subject is called the affirmative; the side that does not, the negative.
2. Each team should prepare its arguments carefully: decide what points are to be covered by each speaker, consult books, prepare notes or cards, and anticipate the opponents' views.
3. Each debater's speech should be a good example of sound argument. It is better practice to establish four or five solid points than to list a catalogue of points.

The procedure

1. The chairman announces the topic, introduces the speakers, explains any time limits and announces the judges' decision.
2. The debaters speak in this order:
   a. First Affirmative
   b. First Negative
   c. Second Affirmative
   d. Second Negative
3. The first speaker for the affirmative makes the rebuttal.

The iudqment

1. The decision is given to the side that has more effectively presented and refuted the arguments.

Stage 4: (continued)

Oral Presentations/ Speeches (from *Junior High Social Studies* TRM 1989, p. *67)*

Oral presentations and speeches follow a similar process to writing. As in the prewriting stage, research and organizing information are necessary steps preceding a speaking task.

Steps necessary for effective speaking:

1. Prepare an oral presentation/speech
   - select a topic
   - carry out research
   - make an outline (organize information)
   - make notes
     - important points to cover (these should be as reminders only, not to be read)
   - practise
     - know topic and sequence
     - plan effective and interesting opening
     - practise often and in front of those who can offer constructive criticism

2. Speak clearly and distinctly
   - time the length of report
   - enunciate clearly and crisply
   - pronunciation is important
   - audibility, volume and pitch are important qualities
   - variety (vary voice, avoid monotonous pattern)
   - speed (slowly rather than quickly, pause occasionally)
   - correct sentence structure

3. Delivery
   - look at audience (establish eye contact)
   - start slowly
   - aim voice at someone at back of the room
   - good posture, relaxed stance
   - avoid mannerisms that may distract (pacing, hand movements)
   - use 'enthusiasm/confidence to control attention

Stage 5: Evaluation

***"Independence, creativity and self-reliance are all facilitated when self-criticism* and self-evaluation are basic."**

Carl Rogers

The evaluation stage plays a pivotal role in the development of research skills. This stage is made up of two evaluation components.

1. Ongoing component – While the activity is happening, teachers and students evaluate the process and the product.

2. Review component – After the assignment is complete, teachers and students identify strengths, needed improvements and transferability of the activity.

The following examples provide ideas for implementing both components.

Evaluation Techniques
(from ***Social Studies Grades I-3,*** TRM 1989, p. 94)

Any teaching strategy that will help the student make greater progress in learning can be used as an evaluation technique. The following tools may be used for evaluation:

- observation
- journal/daily log
- checklist
- student self-evaluation
- anecdotal record
- conferences or interviews with students
- collecting material
- questionnaires and inventories
- tests/quizzes.

Observation

By observing students, teachers can evaluate the process of learning as well as the product. Evaluative data may be obtained by:

- observing and listening to students' comments, questions and expressions
- observing group interaction
- listening to group discussions
- observing drama play and role play
- observing students' use of time and materials
- observing students while they participate in classroom activities.

Observation is an ongoing evaluation tool that cannot be separated from daily classroom activities. Thus, observation is a continuous process.

STAGE 5: (continued)

Evaluation Techniques (continued)

Journal/Daily Log
Students record the activities of the social studies period and evaluate their own progress. They might also express opinions about activities or topics. The teacher can use this information to draw conclusions about student understanding and to plan further appropriate activities.

Entry example:

Today we brought labels from home. We made a neat chart that showed where things came from. There weren't very many under Canada. I wonder where Gobots are made?

From the above journal entry the teacher may conclude that the student did understand the activity. It might also indicate to the teacher that a follow-up activity, such as finding out where the students' favourite toys are made, would be motivating.

Collecting Materials
A collection of samples of work produced by the student can serve as a profile of the student's sequential growth and development. To be useful, the materials must be dated.

Checklist
Checklists can be used at various stages to evaluate the achievement of objectives. They can be used to monitor the students' progress or to serve as a record of concepts and skills introduced, developed, tested and maintained. Students can be observed as they are working by themselves or as part of a group. Various sample checklists are provided; teachers should modify these to meet the objectives of the unit as well as to meet the needs of the students.

Group Effectiveness Appraisal Form
(from The Writing *Process Using the Word Processor,* 1988, p. 2-70, 2-71)

See Appendix for copy-ready form.

GROUP EFFECTIVENESS APPRAISAL FORM

Name: _____ **Group:** _____

Project Title: _____

Audience: _____

Rate your group on a 1 to 5 basis (1 = poor; 2 = fair; 3 = good; 4 = very good; 5 = excellent):

1. We worked cooperatively with all group members. 1 2 3 4 5
2. We accomplished what we set out to complete. 1 2 3 4 5
3. We were satisfied with our performance of this group task. 1 2 3 4 5
4. We used our group time efficiently without wasting or misusing time. 1 2 3 4 5
5. We all contributed fairly in the completion of this group task. 1 2 3 4 5

Personal assessment and observations:

1. Did you feel satisfied with your own participation in the project? Discuss your feelings honestly. _____
2. Do you think that the project participation was fairly equal (that is, do you feel others in your group worked well and contributed fairly)? _____
3. Do you think there are some ways your group could have improved and therefore produced a better finished project? _____
4. Did you like doing a project like this, or do you honestly prefer to work on your own? (Please answer explaining why or why not.) _____
5. Please add any helpful comments you may think of: _____

STAGE 5: (continued)

Sample Student Self-Evaluation

This evaluation form is most appropriate for students in grades 4 to 6. See Appendix for copy-ready form.

MY RESEARCH ACTIVITY

		Very Easily	Easily	With Difficulty
	1 Using My Planning Skills			
1.	I understood the topic.	❑	❑	❑
2.	I made up research questions.	❑	❑	❑
3.	I suggested possible information sources.	❑	❑	❑
4.	I chose my questions.	❑	❑	❑
5.	I developed a research plan.	c l	❑	❑
	2 Using My Information Retrieval Skills			
1.	I identified sources of information.			
	– in the school	❑	❑	❑
	in the community	❑	❑	❑
	3 Using My Information Processing Skills			
1.	I gathered and organized my information.	❑	❑	❑
2.	I discovered information I did not know before.	❑	❑	❑
3.	I answered the question(s).	❑	❑	❑
4.	I edited my work.	c l	❑	❑
	4 Using My Information Sharing Skills			
1.	I presented my research.	❑	❑	❑
	5 Using My Evaluation Skills			
1.	I carried out my action plan.	❑	❑	❑
2.	I learned the following skills which can be used in other activities: _____			

STAGE 5: (continued)

Peer Evaluation: Oral Presentations/Speeches (from Junior High Social *Studies* TRM 1989, p. 69)

An evaluation form such as this can be used initially as an awareness exercise with students. Once students feel comfortable providing feedback to each other, a less structured approach can be used. See Appendix for copy-ready form.

	Very Good 3	Satisfactory 2	Poor 1
1. Gave an interesting introduction			
2. Presented clear explanation of topic			
3. Presented information in acceptable order			
4. Used complete sentences			
5. Offered a concluding summary			
6. Spoke clearly, correctly, distinctly and confidently			
7. Maintained eye contact			
8. Maintained acceptable posture			
9. Maintained the interest of the class			
10. Used visual audio aids well			
11. Handled questions and comments from the class			
			Total /33

CHAPTER 7

From The Classroom

Is this chapter useful to me?

Most teachers will be able to extract ideas for implementing research from this chapter.

What will I find in this chapter?

- Sample research units developed and used by Alberta teachers at all division and research levels

"Students come to understand their own search process through guided use of information from elementary school through high school. They learn that thinking, reflecting, and mulling are an important part of learning from information; that uncertainty is **not** *only okay, it is the beginning of* **all** *learning. They* **take the** *initiative to find out and* **the** *responsibility for telling others. These are the basic skills for the information age."*

Carol Kuhlthau

How do we guide students? How do we move from the general principles of chapter 3 and the curriculum-based framework of chapters 4, 5 and 6 to Monday morning's classroom?

The following sample assignments from classrooms provide "tried and true" research activities in different subjects and at different division levels.

Some examples use advanced level for some research stages and introductory level for other stages. Some projects concentrate on developing student independence in the use of certain skills while providing more teacher direction in other skill areas.

All of the vignettes submitted by Alberta teachers could not be used, so samples were selected on the basis of division and subject.

Sample 1 – Division 1

Topic: Who's Who in the zoo
Subject: Language Arts/ Science
Grade: 1 and 1/2
Number of Students: 24/18
Time: 3 weeks
Objectives:
The student will:
- locate basic information about an animal by examining pictures and using key words;
- organize information in appropriate categories; and
- report information through pictures and sentence writing.

Level: Introductory
Research Stages:
All, emphasis on Information Retrieval.

From the Classroom of . . .

... Sheila Spence, who has 20 years of teaching experience. She is a part-time gifted program teacher, part-time resource room teacher and part-time teacher-librarian at Pines Community School, Red Deer.

Stage 1: Planning (This activity was cooperatively planned by the teacher-librarian and teachers.)

Day 1
Classroom teachers read several animal stories and factual books with students. Teachers led the children in brainstorming lists of greetings, animals and animal sounds. Children developed sentence patterns.

Day 2
The students were introduced to the concept of habitat. Children painted pictures of animals in their natural habitats.

Day 3
Each pair of students selected an animal from a list. Students were asked to prepare the following projects to be evaluated:
1. Report of three sentences, each on a separate page with an illustration depicting appearance, habitat and food.
2. Poem based on the form in *A Children's Zoo,* by Tana Hoban.
3. Birth announcement complete with a picture of baby and mother. Students were evaluated on their oral reading of their work to the teacher-librarian and on the final products. Students were introduced to the concept of editing.

Stage 2: Information Retrieval

Day 4
Each pair of students selected an animal from a suggested list. Students, with teacher/teacher-librarian guidance, brainstormed and categorized questions about animals to limit research to appearance, habitat and food.

Day 5
A field trip to the zoo provided an opportunity for the children to view the animals to be studied. During the tour, students mapped the journey around the zoo.

Day 6
After returning from the zoo, students brainstormed questions to help them find out about one particular animal.

Day 7-8
Students studied pictures, skimmed and read text, looked for key words and took brief notes. The major portion of the research was completed in one class. Students recalled information from the zoo. Videos and filmstrips were used at the beginning of each session.

Sample 1 – Division 1 (continued)

Comments on Using Research

I believe resource-based learning increases student independence, and expands student interest in and ability to "find things out" for themselves. They begin to make interdisciplinary connections, and believe it or not, some even read more books than before!

I developed an interest in using resources from outside the classroom as resources were very limited in my first schools. What was essential has become natural.

The biggest surprise to me was that very young children can research effectively.

Stage 3: information Processing

Day 9
Students translated information frompictures to verbal to written form, and recorded key words only.

Day 10
Student notes were written as a short "report" divided into sections on appearance, habitat and food. Grade 1 students were given sentence patterns to follow. Grade 2 students developed their own sentence structures from notes.

Day 11
Teachers and parents read three baby animal books to small groups. Students recorded information on the number, size and special name of the young of the chosen animal.

Day 12
With teacher guidance, students brainstormed, used their notes and searched books for five words to describe an animal. Each child then wrote a five-word poem (modelled on *A Children's* Zoo, by Tana Hoban) and illustrated it with a picture of the animal in its habitat.

Stage 4: Information Sharing

All work, including notes, poem and birth announcement, was made into a booklet that was read to one of the teachers. The booklets were then displayed on the bulletin board and at the district office. Students shared their work first with the teacher, then with the teacher-librarian and then with a small group of fellow students.

Stage 5: Evaluation

Emphasis was placed on raising student self-esteem and focused on the positive results. Evaiuation was an ongoing procedure, occurring at each stage to ensure students received adequate reinforcement and guidance.

Sample 2 – Division 2

Topic: Fairy and Folk Tales
Subject: Language Arts/Art
Grade: 5
Number of Students: 27
Time: Approximately 6-8 weeks
Objectives:
Students will:

- become familiar with a variety of fairy tales;
- be able to identify common elements;
- compare different versions;
- write traditional tales with new variations; and
- write original tales.

Level: Introductory
Research Stages:
All, emphasis on Information Processing.

From the Classroom of . . .

. ..Judy Mentz, who has 14 years of teaching experience. She is a teacher-librarian at Mountview School, Red Deer, and teaches Grade 4 language arts.

Stage 1: Planning (1 week) (This activity was cooperatively planned by the teacher-librarian and teachers.)

The teacher and teacher-librarian team taught throughout the unit. Students were introduced to fairy tales through a discussion of prior knowledge and new information on the historical background of folk literature.

The teacher and teacher-librarian each read a preselected fairy tale and discussed/identified its elements with a group of students. Groups were then switched and the process was repeated to establish the common elements found in fairy tales.

Students were to select several fairy/folk tales, draft a rough bibliography, and create a booklet that provided a synopsis of each tale and the common elements found in the fairy tale.

Stage 2: Information Retrieval (2 weeks)

The teacher-librarian set aside the school's fairy tale books, filmstrips and videotapes and borrowed additional resources from other schools. The public library was also used by students. Students were encouraged to find and read fairy/folk tales. At times they worked in groups and took turns reading, while at other times they read individually and sometimes shared their thoughts on the tale with the whole class. Students received "bonus" points for outside reading. Students were also evaluated on their rough list of resources at this point.

Stage 3: Information Processing (I-2 weeks)

Students were guided through activities (e.g. rewriting the tale with a different ending, writing the tale in a modern setting) using fairy tales that they had chosen.

Working in groups of three to four, students identified common elements in several folk tales. Students then began work on a booklet containing a synopsis of each tale and the author, title, illustrator and country of origin. With teacher-librarian guidance, students studied eight versions of Cinderella, and identified and compared the basic elements of folktales.

Sample 2 – Division 2 (continued)

Comments on Using Research

I find that resources available in the classroom are too limited and restrictive. Additional resources are necessary in non-fiction and literature.

Some of the effects of using resource-based learning are that students gain a wider base of knowledge, demonstrate greater motivation, gain a greater desire to learn more, gain a greater understanding of how to find information and can transfer skills from one subject to another.

The biggest surprise for the students and teacher was probably the great number of versions of particular fairy tales. Students also found a wealth of literature that many didn't realize existed and didn't previously know where to find in the library.

Stage 4: Information Sharing

Once a week, on celebration day, students shared that week's experience through class discussion. Students were evaluated for participation and group work at this stage.

Stage 5: Evaluation

Students provided feedback on the unit to the teachers and made written suggestions for improvement for next year's class.

Sample 3 – Division 2

From the Classroom of . . .

. ..Irene Washylk who has 13 years teaching experience, six years experience as a curriculum coordinator and is currently an Assistant Principal. She teaches Social Studies 5/6, French 4,5,6, Language Arts and Physical Education at Our Lady of Victories Elementary School, Edmonton Catholic Schools.

Topic: Create Your Own Country
Subject: Social Studies
Grade: 6
Number of Students: 28
Time: 2 1/2 weeks
Objectives: To have students assimilate all knowledge from the "government unit," in the creation of their country.
Level: Introductory and Advanced, with emphasis **on** Advanced
Research Stages: All

Note: Because the school has no teacher-librarian, resource room students were combined with the regular Grade 6 social studies class, so that a team-teaching situation was established.

Stage 1: Planning (3 days)

Students used the *Expressways* series and the library to gain the research skills needed to do the project. They also studied democratic procedures during the unit "Different Levels of Government."

The students met in prearranged groups to discuss the formation of their countries. Each group was given a set of questions which focussed on the typical problems a country faces. The problems included natural disasters, racial and economic problems, and political unrest and cultural concerns. Before beginning the next stage, teachers gave each group feedback on their plan for creating their country.

Stage 2: Information Retrieval (3 days)

Groups used library resources (encyclopedias, atlases and books) to gather information on their country's problems. Teachers checked a rough bibliography from each group at the end of each library period.

Stage 3: Information Processing (2 days)

Students made point form notes from text, graphs, charts and diagrams. Students then made inferences and assumptions, and used creativity to "create their own country profile." Profiles were checked by the teacher for demography, geography, resources, climates, problems and responses to questions.

Sample 3 - Division 2 (continued)

Comments on Using Research

I rind the effects of resource-based learning on my students extremely positive - my students become more involved in the project and retain the information.

I was delighted with the good quality of the projects and how well all *the students did, especially the resource-room students. These students gained a great self-worth and were very proud of their contributions to the group project.*

This type of enrichment activity is excellent to reinforce and test the knowledge retained by the students.

Stage 4: Information Sharing (3 days)

Using student-produced maps, flags, logos, charts on laws and punishments, a list of possible natural resources, and **a** paragraph on developing and improving their country, each group presented its country to the class, and led the class in a discussion. The class reacted to the group's methods of governing its country and solving the country's problems. Teacher evaluated presentation on both the oral and written work.

Stage 5: Evaluation

Students provided input to teachers on the most successful and least successful aspects of the assignment. Specific areas of concern, such as time allotted, resources available, method of evaluation and suggestions for improving the assignment were discussed.

Sample 4 – Division 3

Topic: Culmination of the History of the Earth unit and preparation for a trip to the Tyrell Museum.
Subject: Science
Grade: 8
Number of Students: 32
Time: 10 class periods
Objectives: To motivate students to use creativity and ingenuity to present material to their peers.
Level: Advanced
Research Stages:
All, emphasis on Information Sharing.

From the Classroom of . . .

. ..James Knull, science teacher, and Diane Antoniuk, teacher–librarian, at Dan Knott Junior High School in Edmonton. James and Diane both have 20 years of teaching experience and Diane works with teaching staff to develop an integrated library program.

Stage 1: Planning (2 days)

The unit, The History of the Earth, was taught in class, but students were told a library project would be the concluding activity.

Students selected their own topic from any section of the unit, and were given complete freedom to choose **how** (alone, group and method) to present material. They were assured that all techniques were valuable and that they would not “lose marks” for being creative.

At the end of this stage, students informed the teacher of their planned end product and provided a very general evaluation criteria outline (e.g., for videotape production-special effects, sound, creativity, content, technical quality) for themselves, teacher and teacher-librarian to use.

Stage 2: Information Retrieval (2 days)

Students collected information from a variety of sources, including the card catalogue, reference books, other non-fiction books, audiovisual materials, the pamphlet file and a magazine index. The teacher and teacher-librarian were available for consultation. The teacher-librarian marked a working bibliography.

Stage 3: Information Processing (3 days)

Students chose their own strategies to select, evaluate, organize and record information before beginning work on their final project. Students were encouraged to consult the teacher and teacher-librarian for feedback. The teacher-librarian conducted inservices on the video camera for those students who requested it.

Sample 4 – Division 3 (continued)

Comments on Using Research

I fee/ that resource-based learning increases student interest, motivational levels and the opportunity for group work.

You can only do this if you have a good working relationship with the teacher-librarian.

Stage 4: Information Sharing (3 days)

Most students presented their project to the whole class. Some of the projects included; videotapes (one with characters dressed in caveman costumes), a puppet show describing the eras of the earth's history, numerous posters, written reports and poems. The end product was evaluated according to the criteria outlines developed by the students.

Stage 5: Evaluation

The students, as audience, wrote responses to the class presentations. The students used these responses to reflect on their experience. Students provided teacher and teacher-librarian with their own assessment based on the evaluation criteria outline (from the planning stage) and reached a final evaluation during a conference with the teacher and teacher-librarian.

Sample 5 – Division 4

Topic: Population and Resource Distribution in "Third World" Countries
Subject: Social Studies 20
Grade: 11
Number of Students: 30 per class
Time: 3-4 class periods (80 minutes per period)
Objectives: Students will develop a strategy that allows them to identify and define a problem of population and/or inadequate resource distribution in a "Third World" country. They will be able to suggest possible solutions to the problems identified.
Level: All
Research Stages: All, emphasis on Information Processing

From the Classroom of . . .

. ..Ed Somerville, who has 15 years of teaching experience and is currently a teacher-librarian and Social Studies 30 teacher at Lindsay Thurber Comprehensive High School in Red Deer.

Stage 1: Planning (1 day) (This activity was cooperatively planned by the teacher-librarian and teachers.)

The subject teacher was responsible for the preresearch phase of this unit and discussed the curriculum goals of the unit with students.

The teacher provided students with an outline of the requirements of the assignment, the options available and described the method of evaluating the unit. The research phase of the assignment was described, and the teacher-librarian's input and participation in the teaching and evaluation of the unit were explained.

During this preresearch stage, the subject teacher defined the essay question and identified the "problem" to be solved.

Students selected a developing country to study from a list prepared by the teachers and teacher-librarian. The list was limited to countries in which suitable information was available. Students used an encyclopedia to get a general outline of the information and to narrow their topic; prepared a thesis statement to explain reasons or events that may have contributed to that country's status as a developing country; developed a list of research questions to guide their research; submitted to the teacher, before they began, a list of resources they thought would be helpful to them.

Students were expected to check with teacher and teacher–librarian for feedback as they progressed through each step in the assignment:

- complete a formal written paper and outline
- present their work to the class in an oral presentation with charts
- design a short quiz on their material to check peer understanding (optional)
- assist fellow students in evaluating their oral presentation
- complete a list of references to be submitted with the final draft of the paper
- demonstrate understanding of the research process by applying previously learned skills.

Sample 5 – Division 4 (continued)

Comments on Using Research

I fee/ that resource-based learning individualizes instruction, accommodates various learning styles and provides the teacher with the ability to teach essential research skills. It allows for variable reading abilities of students while providing the opportunity to utilize cooperative learning with students.

Students are presented with opportunities to use a variety of formats to access information (print, non-print and computer), and to use these methods to present information.

Given adequate instruction, strategies and resources, senior students are capable of producing very sophisticated and insightful work.

A fair amount of effort and resources are devoted to this cross-grade social studies unit. One research unit—clearly defined and designed to achieve specific goals and results -is much more effective in impacting learning than any number of haphazard or poorly planned units.

Stage 2: information Retrieval (1 day)

Students were provided with a list of resources to use to complete the research.

Students were expected to apply all information gathering skills mastered to this point to locate current information.

Students were encouraged to use other libraries to supplement the school library's resources.

Students were expected to gather information from computers, videocassettes, filmstrips and films. At this stage, students were evaluated by the teacher-librarian on their working bibliography.

Stage 3: Information Processing (2 days)

Students were taught to identify relevant information as they read.

They were expected to identify main ideas and details relevant to their topic, to assimilate new vocabulary, to summarize information and to use text structures, such as chapter headings, to assist them in their search.

Stage 4: Information Sharing (2 days)

Students presented their findings to the class as a whole (an oral synopsis).

Stage 5: Evaluation

Students provided feedback to teacher and teacher-librarian on assignment and identified research skills they could use in other subjects.

Sample 6 – Division 4

Topic: Live From Hollywood
Subject: English
Grade: 11
Number of Students: 25
Time: 1 week
Objective: To have students research a poet's life and works and to present this information in the form of a TV interview.
Level: All
Research Stages: All

From the Classroom of . . .

. ..John Phillips, teacher-librarian, and Claire Doane, English teacher, at St. Francis High School in Calgary. John has 19 years of teaching experience and Claire has seven.

Stage 1: Planning (1 day)

Students were introduced to a wide range of Canadian poets and poetry. Techniques of interviewing seen on various TV shows were then discussed. Students worked in pairs. They studied one assigned poet, determined their method of presentation, resources to use and research questions. The interview was the only product evaluated.

Students selected three other interviews they would like to view and evaluate. The teacher and teacher-librarian then worked with the class as a whole to determine evaluation criteria and value.

Criteria included:

4 Interview techniques – costuming and makeup; eye contact; acting ability; enunciation; knowledge of script; body language; voice projection.

b) Interview contents – introduction and conclusion; poetry reading (two to three poems); biographical information (childhood, education, current family life, residence, pets current occupation); important influences on writing; method of writing; amount of time to write; where ideas came from; list of works; physical samples of books.

Stage 2: Information Retrieval (1 day)

Students used videos, books, anthologies, vertical files, etc. to locate information about and by their poet. They selected two or three poems to discuss in their interviews.

Stage 3: information Processing (2 days)

For script development, students used biographical information as well as poetry readings, and tried to make the interview as authentic as possible by including information about the Poet's personality, temperament and appearance. Each pair decided on their interview format and the content of the interview. Each Pair was responsible for rehearsal on their own time.

Sample 6 – Division 4 (continued)

Comments on Using Research

I developed an interest in *outside resources when I spoke to our teacher-librarian who showed me new possibilities for English projects.*

I fee*l that resource-based learning helps students to become more independent in their learning-they become more responsible for the* finished product. Students *can research and report on issues that interest them.*

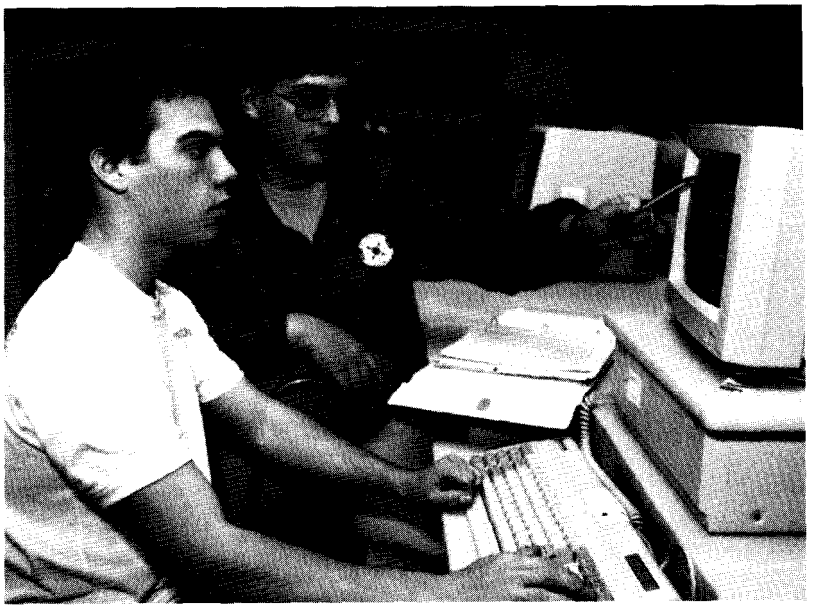
I was delighted that students were able to present quite authentic interviews, and with practice, gave quite good poetry readings!

Stage 4: Information Sharing (3 days)

Each lo-minute interview **was** videotaped and evaluated by the teacher, teacher-librarian and three students. Technical quality was not evaluated. A consensus was reached on the team's mark after discussion. Four interviews were evaluated each day.

Stage 5: Evaluation

Students indicated areas of research most and least effective.



APPENDIX

Copy-Ready Forms

- Overview of Research Skills Continuum
- Teacher Guide for Planning Research – A Checklist
- Research Activity Unit Plan
- Student Research Plan
- Group Effectiveness Appraisal
- Student Self-evaluation
- Peer Evaluation: Oral Presentations:'Speeches

OVERVIEW OF RESEARCH SKILLS CONTINUUM

STAGES	SKILLS
Planning	• Establish Topic • Identify Information Sources • Identify Audience and Presentation Format • Establish Evaluation Criteria • Review Process
Information Retrieval	• Locate Resources • Collect Resources • Review Process
Information Processing	• Choose Relevant Information • Evaluate Information • Organize and Record Information • Make Connections and Inferences • Create Product • Revise and Edit • Review Process
Information Sharing	• Present Findings • Demonstrate Appropriate Audience Behaviour • Review Process
Evaluation	• Evaluate Product • Evaluate Research Procedures and Skills • Review Process

TEACHER GUIDE FOR PLANNING RESEARCH – A CHECKLIST

4. Guidelines and Considerations

The Assignment

Curriculum Fit
_____ Format
Research procedures to be taught
Evaluation
_____ The purpose
a) to introduce
___ b) to review
c) to expand information and knowledge
___ d) to focus (e.g., general information, subject specific, opinion, issue based)

The Students

_____ Ability and stage of development
_____ Learning preferences
_____ Social groupings
Cooperative learning skills

The Resources

_____ School library
Other libraries
_____ Teacher-librarian
Other resource people
Community
Other

B. Goals

Concepts

to apply or practise research procedures
to improve decision-making ability

Skills

to plan for research
to work in a variety of social situations
_____ to support a personal opinion

Attitudes

to develop an appreciation for knowledge and culture
to recognize that a variety of opinions exists
to develop cooperative learning skills
to experience pride in creating a product
desire to improve future efforts
to understand and value effective research procedures
to appreciate need for lifelong learning skills

RESEARCH ACTIVITY UNIT
PLAN

SUBJECT/UNIT: _____

THEME: _____

TIMELINE: _____

GRADE: _____

Stages	Time	Strategies	Resources
Stage 1: Planning A. Establish Topic B. Identify Information Sources C. Identify Audience and Presentation Format D. Establish Evaluation Criteria E. Review Process			
Stage 2: Information Retrieval A. Locate Resources B. Collect Resources C. Review Process			

Stages	Time	Strategies	Resources
tage 3: Information rocessing . Choose Relevant Information . Evaluate Information . Organize and Record Information . Make Connections and Inferences . Create Product Revise and Edit . Review Process			
Stage 4: Information Sharing A. Present Findings 3. Demonstrate Appropriate Audience Behaviour C. Review Process			
Stage 5: Evaluation A. Evaluate Product B. Evaluate Research Procedures and Skills C. Review Process			

STUDENT RESEARCH PLAN
STAGE 1: PLANNING

Name: _____ Subject: _____ Grade: _____

Theme: _____

Establish Topic

Topic Statement: _____

_____

Subtopics: _____

_____

Subject Headings: _____

_____

Identify Information Sources

Resources: _____

_____

_____

_____

Identify Audience and Presentation Format

Presentation Format and Needs: _____

_____

Audience: _____

Establish Evaluation Criteria

Guidelines: _____

_____

Evaluation: _____

_____

Timeline: _____

_____

Checked and Approved: _____

GROUP EFFECTIVENESS APPRAISAL

Name: _____ **Group:** _____

Project Title: _____

Audience: _____

Rate your group on a 1 to 5 basis (1 = poor; 2 = fair; 3 = good; 4 = very good; 5 = excellent):

1.	We worked cooperatively with all group members.	1	2	3	4	5
2.	We accomplished what we set out to complete.	1	2	3	4	5
3.	We were satisfied with our performance of this group task.	1	2	3	4	5
4.	We used our group time efficiently without wasting or misusing time.	1	2	3	4	5
5.	We all contributed fairly in the completion of this group task.	1	2	3	4	5

Personal assessment and observations:

1. Did you feel satisfied with your own participation in the project? DISCUSS your feelings honestly.

_____

_____

2. Do you think that the project participation was fairly equal (that is, do you feel others in your group worked well and contributed fairly)? _____

_____

_____

3. Do you think there are some ways your group could have improved and therefore produced a better finished project? _____

_____

4. Did you like doing a project like this, or do you honestly prefer to work on your own? (Please answer explaining why or why not.) _____

_____

_____

5. Please add any helpful comments you may think of: _____

_____

(from The *Writing* ***Process*** *Using* ***the*** Word ***Processor*** Inservice Leader's Reference Manual 01988, Alberta Education, p 2-70, 2-71)

STUDENT SELF-EVALUATION

		Very Easily	Easily	With Difficulty
	1 Using My Planning Skills			
1.	I understood the topic.	❑	❑	❑
2.	I made up research questions.	❑	❑	❑
3.	I suggested possible information sources.	❑	❑	❑
4.	I chose my questions.	❑	❑	❑
5.	I developed a research plan.	❑	❑	❑
	2 Using My Information Retrieval Skills			
1.	I identified sources of information.			
	– in the school	❑	❑	❑
	in the community	❑	❑	❑
	3 Using My Information Processing Skills			
1.	I gathered and organized my information.	❑	❑	❑
3.	I discovered information I did not know before.	❑	❑	❑
3.	I answered the question(s).	❑	❑	❑
4.	I edited my work.	❑	❑	❑
	4 Using My Information Sharing Skills			
1.	I presented my research.	❑	❑	❑
	5 Using My Evaluation Skills			
1.	I carried out my action plan.	❑	❑	❑

2. I learned the following skills which can be used in other activities: _____

_____

_____

_____

PEER EVALUATION: ORAL PRESENTATIONS/SPEECHES

	Very Good 3	Satisfactory 2	Poor 1
1. Gave an interesting introduction			
2. Presented clear explanation of topic			
3. Presented information in acceptable order			
4. Used complete sentences			
5. Offered a concluding summary			
6. Spoke clearly, correctly, distinctly and confidently			
7. Maintained eye contact			
8. Maintained acceptable posture			
9. Maintained the interest of the class			
10. Used visual/audio aids well			
11. Handled questions and comments from the class very well			
			Total /33

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